

Putnam Variable Trust (the "Trust")

Class IA and IB Shares

Symbols not available

Putnam VT Diversified Income Fund	Putnam VT International Equity Fund
Putnam VT Emerging Markets Equity Fund	Putnam VT International Value Fund
Putnam VT Equity Income Fund	Putnam VT Mortgage Securities Fund
Putnam VT George Putnam Balanced Fund	Putnam VT Multi-Asset Absolute Return Fund
Putnam VT Global Asset Allocation Fund	Putnam VT Multi-Cap Core Fund
Putnam VT Global Equity Fund	Putnam VT Research Fund
Putnam VT Global Health Care Fund	Putnam VT Small Cap Growth Fund
Putnam VT Government Money Market Fund	Putnam VT Small Cap Value Fund
Putnam VT Growth Opportunities Fund	Putnam VT Sustainable Future Fund
Putnam VT High Yield Fund	Putnam VT Sustainable Leaders Fund
Putnam VT Income Fund	

FORM N-1A

PART B

STATEMENT OF ADDITIONAL INFORMATION ("SAI")

4/30/20

This SAI is not a prospectus. If the Trust has more than one form of current prospectus, each reference to the prospectus in this SAI includes all of the Trust's prospectuses, unless otherwise noted. The SAI should be read together with the applicable prospectus. Portions of the annual reports of each of [Putnam VT Diversified Income Fund](#), [Putnam VT Emerging Markets Equity Fund](#), [Putnam VT Equity Income Fund](#), [Putnam VT George Putnam Balanced Fund](#), [Putnam VT Global Asset Allocation Fund](#), [Putnam VT Global Equity Fund](#), [Putnam VT Global Health Care Fund](#), [Putnam VT Government Money Market Fund](#), [Putnam VT Growth Opportunities Fund](#), [Putnam VT High Yield Fund](#), [Putnam VT Income Fund](#), [Putnam VT International Equity Fund](#), [Putnam VT International Value Fund](#), [Putnam VT Mortgage Securities Fund](#), [Putnam VT Multi-Asset Absolute Return Fund](#), [Putnam VT Multi-Cap Core Fund](#), [Putnam VT Research Fund](#), [Putnam VT Small Cap Growth Fund](#), [Putnam VT Small Cap Value Fund](#), [Putnam VT Sustainable Future Fund](#) and [Putnam VT Sustainable Leaders Fund](#) are incorporated by reference in this SAI. For a free copy of a fund's annual report or a prospectus dated April 30, 2020 as revised from time to time, call Putnam Investments at 1-800-225-1581, visit Putnam's website at putnam.com or write Putnam Investments, P.O. Box 219697, Kansas City, MO 64121-9697.

Part I of this SAI contains specific information about each fund. Part II includes information about these funds and the other Putnam funds.

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TRUST ORGANIZATION AND CLASSIFICATION

Each fund, except for Putnam VT Global Health Care Fund, is a “diversified” series of the Trust, a Massachusetts business trust organized on September 24, 1987. A copy of the Agreement and Declaration of Trust, which is governed by Massachusetts law, is on file with the Secretary of The Commonwealth of Massachusetts. Prior to April 30, 2016, Putnam VT Government Money Market Fund was known as Putnam VT Money Market Fund; prior to April 30, 2018, Putnam VT Multi-Asset Absolute Return Fund was known as Putnam VT Absolute Return 500 Fund, Putnam VT Mortgage Securities Fund was known as Putnam VT American Government Income Fund, Putnam VT Sustainable Leaders Fund was known as Putnam VT Multi-Cap Growth Fund and Putnam VT Sustainable Future Fund was known as Putnam VT Multi-Cap Value Fund; prior to June 30, 2018, Putnam VT Multi-Cap Core Fund was known as Putnam VT Investors Fund and prior to September 17, 2018, Putnam VT Small Cap Growth Fund was known as Putnam VT Capital Opportunities Fund; prior to April 30, 2020, Putnam VT Emerging Markets Equity Fund was known as Putnam VT International Growth Fund.

The Trust is an open-end management investment company with an unlimited number of authorized shares of beneficial interest. The Trustees may, without shareholder approval, create two or more series of shares representing separate investment portfolios having such preferences and special or relative rights and privileges as the Trustees determine.

The Trust is currently divided into twenty-one series of shares, each representing a separate investment portfolio which is being offered to separate accounts of various insurance companies. Shares of each series are currently divided into two classes: class IA shares and class IB shares. Class IB shares are subject to fees imposed pursuant to a distribution plan. The funds may also offer other classes of shares with different sales charges and expenses. Because of these different sales charges and expenses, the investment performance of the classes will vary.

The two classes of shares are offered under a multiple class distribution system approved by the Trust's Trustees, and are designed to allow promotion of insurance products investing in each fund of the Trust through alternative distribution channels. The insurance company issuing a variable contract selects the class of shares in which the separate account funding the contract invests.

Each share has one vote, with fractional shares voting proportionally. Shares of all series and classes will vote together as a single class on all matters except (i) when required by the Investment Company Act of 1940 or when the Trustees have determined that a matter affects one or more series or classes of shares materially

differently, shares are voted by individual series or class; and (ii) when the Trustees determine that such a matter affects only the interests of a particular series or class, then only shareholders of that series or class are entitled to vote. The Trustees may take many actions affecting a fund without shareholder approval, including under certain circumstances merging your fund into another Putnam fund. Shares are freely transferable, are entitled to dividends as declared by the Trustees, and, if a fund were liquidated, would receive the net assets of the fund.

Each fund may suspend the sale of shares at any time and may refuse any order to purchase shares. Although each fund is not required to hold annual meetings of its shareholders, shareholders holding at least 10% of the outstanding shares entitled to vote have the right to call a meeting to elect or remove Trustees, or to take other actions as provided in the Agreement and Declaration of Trust.

Shares of the funds may only be purchased by an insurance company separate account. For matters requiring shareholder approval, you may be able to instruct the insurance company separate account how to vote the fund shares attributable to your contract or policy. See the Voting Rights section of your insurance product prospectus.

INVESTMENT RESTRICTIONS

As fundamental investment restrictions, which may not be changed as to any fund without a vote of a majority of the outstanding voting securities of that fund, each fund may not and will not take any of the following actions with respect to that fund:

(1) Borrow money in excess of 33 1/3% of the value of its total assets (not including the amount borrowed) at the time the borrowing is made.

(2) Underwrite securities issued by other persons except to the extent that, in connection with the disposition of its portfolio investments, it may be deemed to be an underwriter under certain federal securities laws.

(3) Purchase or sell real estate, although it may purchase securities of issuers which deal in real estate, securities which are secured by interests in real estate, and securities which represent interests in real estate, and it may acquire and dispose of

real estate or interests in real estate acquired through the exercise of its rights as a holder of debt obligations secured by real estate or interests therein.

(4)(a) (All funds except **Putnam VT Equity Income Fund, Putnam VT Global Asset Allocation Fund, Putnam VT Global Health Care Fund, Putnam VT Multi-Asset Absolute Return Fund, Putnam VT Research Fund, Putnam VT Small Cap Growth Fund and Putnam VT Sustainable Future Fund**) Purchase or sell commodities or commodity contracts, except that the fund may purchase and sell financial futures contracts and options and may enter into foreign exchange contracts and other financial transactions not involving physical commodities.

(4)(b) (**Putnam VT Equity Income Fund, Putnam VT Research Fund, Putnam VT Small Cap Growth Fund and Putnam VT Sustainable Future Fund**) Purchase or sell commodities or commodity contracts, except that the fund may purchase and sell financial futures contracts and options.

(4)(c) (**Putnam VT Multi-Asset Absolute Return Fund, Putnam VT Global Asset Allocation Fund and Putnam VT Global Health Care Fund**) Purchase or sell physical commodities, except as permitted by applicable law.

(5) Make loans, except by purchase of debt obligations in which the fund may invest consistent with its investment policies (including without limitation debt obligations issued by other Putnam funds), by entering into repurchase agreements, or by lending its portfolio securities.

(6)(a) (All funds except **Putnam VT Global Health Care Fund**) With respect to 75% of its total assets, invest in securities of any issuer if, immediately after such investment, more than 5% of the total assets of the fund (taken at current value) would be invested in the securities of such issuer; provided that this limitation does not apply to obligations issued or guaranteed as to interest or principal by the U.S. government or its agencies or instrumentalities or to securities issued by other investment companies.

(6)(b) (**Putnam VT Global Health Care Fund**) With respect to 50% of its total assets, invest in securities of any issuer if, immediately after such investment, more than 5% of the total assets of the fund (taken at current value) would be invested in the securities of such issuer; provided that this limitation does not apply to obligations issued or guaranteed as to interest or principal by the U.S. government or its agencies or instrumentalities or to securities issued by other investment companies.

(7)(a) (All funds except **Putnam VT Multi-Asset Absolute Return Fund** and **Putnam VT Global Health Care Fund**) With respect to 75% of its total assets, acquire more than 10% of the outstanding voting securities of any issuer.

(7)(b) (**Putnam VT Multi-Asset Absolute Return Fund**) With respect to 75% of its total assets, acquire more than 10% of the outstanding voting securities of any issuer; provided that this limitation does not apply to obligations issued or guaranteed as to interest or principal by the U.S. government or its agencies or instrumentalities or to securities issued by other investment companies.

(7)(c) (**Putnam VT Global Health Care Fund**) With respect to 50% of its total assets, acquire more than 10% of the outstanding voting securities of any issuer.

(8) Purchase securities (other than securities of the U.S. government, its agencies or instrumentalities) if, as a result of such purchase, more than 25% of the fund's total assets would be invested in any one industry; except that **Putnam VT Global Health Care Fund** may invest more than 25% of its assets in companies that Putnam Management determines are principally engaged in the health sciences industries; and except that **Putnam VT Government Money Market Fund** may invest up to 100% of its assets (i) in the banking industry, (ii) in the personal credit institution or business credit institution industries when in the opinion of management yield differentials make such investments desirable, or (iii) any combination of these.

(9) Issue any class of securities which is senior to the fund's shares of beneficial interest, except for permitted borrowings.

The Investment Company Act of 1940 provides that a "vote of a majority of the outstanding voting securities" of a fund means the affirmative vote of the lesser of (1) more than 50% of the outstanding shares of a fund, or (2) 67% or more of the shares present at a meeting if more than 50% of the outstanding shares are represented at the meeting in person or by proxy.

(All funds except **Putnam VT Equity Income Fund**, **Putnam VT Global Asset Allocation Fund**, **Putnam VT Global Health Care Fund**, **Putnam VT Multi-Asset Absolute Return Fund**, **Putnam VT Research Fund**, **Putnam VT Small Cap Growth Fund** and **Putnam VT Sustainable Future Fund**) For purposes of the fund's fundamental policy on commodities and commodities contracts #(4)(a) above), at the time of the establishment of the policy, swap contracts on financial instruments or rates were not within the understanding of the terms "commodities" or "commodity contracts," and notwithstanding any federal legislation or regulatory action by the Commodity

Futures Trading Commission ("CFTC") that subject such swaps to regulation by the CFTC, the fund will not consider such instruments to be commodities or commodity contracts for purposes of this policy.

For purposes of the funds' fundamental policy on industry concentration (#8 above) and for purposes of the non-fundamental policy on industry concentration (#2 below), Putnam Investment Management, LLC ("Putnam Management"), the funds' investment manager, determines the appropriate industry categories and assigns issuers to them, informed by a variety of considerations, including relevant third party categorization systems. Industry categories and issuer assignments may change over time as industry sectors and issuers evolve. Portfolio allocations shown in shareholder reports and other communications may use broader investment sectors or narrower sub-industry categories.

The following non-fundamental investment policies may be changed by the Trustees without shareholder approval:

(1) **Putnam VT Government Money Market Fund** will not invest in (a) securities which are not readily marketable, (b) securities restricted as to resale (excluding securities determined by the Trustees of the fund (or the person designated by the Trustees of the fund to make such determinations) to be readily marketable), and (c) repurchase agreements maturing in more than seven days, if, as a result, more than 10% of the fund's net assets (taken at current value) would be invested in securities described in (a), (b) and (c).

(2) **Putnam VT Government Money Market Fund** will not purchase securities (other than securities of the U.S. government, its agencies or instrumentalities) if, as a result of such purchase, more than 25% of the fund's total assets would be invested in any one industry, except that the fund may invest up to 100% of its assets in the banking industry.

All percentage limitations on investments (other than pursuant to non-fundamental restriction (1)) will apply at the time of the making of an investment and shall not be considered violated unless an excess or deficiency occurs or exists immediately after and as a result of such investment.

The Trust has filed an election under Rule 18f-1 under the Investment Company Act of 1940 committing each fund that is a series of the Trust to pay all redemptions of fund shares by a single shareholder during any 90-day period in cash, up to the lesser of (i) \$250,000 or (ii) 1% of such fund's net assets measured as of the beginning of such 90-day period.

CHARGES AND EXPENSES

Management fees

Under the management contract dated February 27, 2014 (the "Management Contract"), each fund pays a monthly fee to Putnam Management. The fee is calculated by applying a rate to each fund's average net assets for the month. The rate is based on the monthly average of the aggregate net assets of all open-end funds sponsored by Putnam Management (excluding net assets of funds that are invested in, or that are invested in by, other Putnam funds to the extent necessary to avoid "double counting" of those assets) ("Total Open-End Mutual Fund Average Net Assets"), as determined at the close of each business day during the month, as set forth below:

Putnam VT Emerging Markets Equity Fund:

1.080% of the first \$5 billion of Total Open-End Mutual Fund Average Net Assets;
1.030% of the next \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.980% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.930% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.880% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.860% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.850% of the next \$100 billion of Total Open-End Mutual Fund Average Net Assets;
0.845% of any excess thereafter.

Putnam VT Multi-Asset Absolute Return Fund:

0.880% of the first \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.830% of the next \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.780% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.730% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.680% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.660% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;

0.650% of the next \$100 billion of Total Open-End Mutual Fund Average Net Assets;
0.645% of any excess thereafter.

Putnam VT Global Equity Fund, Putnam VT International Equity Fund, and Putnam VT International Value Fund:

0.850% of the first \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.800% of the next \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.750% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.700% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.650% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.630% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.620% of the next \$100 billion of Total Open-End Mutual Fund Average Net Assets;
0.615% of any excess thereafter.

Putnam VT Global Health Care Fund, Putnam VT Small Cap Growth Fund and Putnam VT Small Cap Value Fund:

0.780% of the first \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.730% of the next \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.680% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.630% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.580% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.560% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.550% of the next \$100 billion of Total Open-End Mutual Fund Average Net Assets;
0.545% of any excess thereafter.

Putnam VT Global Asset Allocation Fund:

0.750% of the first \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.700% of the next \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.650% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.600% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.550% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.530% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.520% of the next \$100 billion of Total Open-End Mutual Fund Average Net Assets;
0.515% of any excess thereafter.

Putnam VT High Yield Fund:

0.720% of the first \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.670% of the next \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.620% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.570% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.520% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.500% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.490% of the next \$100 billion of Total Open-End Mutual Fund Average Net Assets;
0.485% of any excess thereafter.

Putnam VT Growth Opportunities Fund, Putnam VT Multi-Cap Core Fund, Putnam VT Sustainable Leaders Fund, Putnam VT Sustainable Future Fund and Putnam VT Research Fund:

0.710% of the first \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.660% of the next \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.610% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;

0.560% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.510% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.490% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.480% of the next \$100 billion of Total Open-End Mutual Fund Average Net Assets;
0.475% of any excess thereafter.

Putnam VT Diversified Income Fund:

0.700% of the first \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.650% of the next \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.600% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.550% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.500% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.480% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.470% of the next \$100 billion of Total Open-End Mutual Fund Average Net Assets;
0.465% of any excess thereafter.

Putnam VT George Putnam Balanced Fund:

0.680% of the first \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.630% of the next \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.580% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.530% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.480% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.460% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.450% of the next \$100 billion of Total Open-End Mutual Fund Average Net Assets;
0.445% of any excess thereafter.

Putnam VT Equity Income Fund:

0.630% of the first \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.580% of the next \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.530% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.480% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.430% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.410% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.400% of the next \$100 billion of Total Open-End Mutual Fund Average Net Assets;
0.395% of any excess thereafter.

Putnam VT Mortgage Securities Fund and Putnam VT Income Fund:

0.550% of the first \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.500% of the next \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.450% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.400% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.350% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.330% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.320% of the next \$100 billion of Total Open-End Mutual Fund Average Net Assets;
0.315% of any excess thereafter.

Putnam VT Government Money Market Fund:

0.440% of the first \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.390% of the next \$5 billion of Total Open-End Mutual Fund Average Net Assets;
0.340% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;
0.290% of the next \$10 billion of Total Open-End Mutual Fund Average Net Assets;

0.240% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.220% of the next \$50 billion of Total Open-End Mutual Fund Average Net Assets;
0.210% of the next \$100 billion of Total Open-End Mutual Fund Average Net Assets;
0.205% of any excess thereafter.

For the past three fiscal years, pursuant to the applicable management contract, each fund incurred the following fees:

Fund name	Fiscal year	Management fee paid	Amount of management fee waived	Amount management fee would have been without waivers
Putnam VT Diversified Income Fund	2019	\$1,101,548	\$0	\$1,101,548
	2018	\$1,132,147	\$0	\$1,132,147
	2017	\$1,161,100	\$0	\$1,161,100
Putnam VT Emerging Markets Equity Fund	2019	\$232,149	\$68,305	\$300,454
	2018	\$310,544	\$53,591	\$364,135
	2017	\$306,727	\$55,020	\$361,747
Putnam VT Equity Income Fund	2019	\$6,535,386	\$0	\$6,535,386
	2018	\$7,099,547	\$0	\$7,099,547
	2017	\$5,448,114	\$0	\$5,448,114
Putnam VT George Putnam Balanced Fund	2019	\$860,010	\$0	\$860,010
	2018	\$739,671	\$0	\$739,671
	2017	\$707,958	\$0	\$707,958
Putnam VT Global Asset Allocation Fund	2019	\$728,904	\$18,309	\$747,213
	2018	\$837,176	\$0	\$837,176
	2017	\$878,157	\$0	\$878,157
Putnam VT Global Equity Fund	2019	\$1,194,585	\$56,938	\$1,251,523
	2018	\$1,134,260	\$0	\$1,134,260
	2017	\$1,132,365	\$0	\$1,132,365
Putnam VT Global Health Care Fund	2019	\$839,322	\$0	\$839,322
	2018	\$882,078	\$0	\$882,078
	2017	\$919,499	\$0	\$919,499
Putnam VT Government Money Market Fund	2019	\$248,375	\$0	\$248,375
	2018	\$266,998	\$0	\$266,998
	2017	\$296,370	\$0	\$296,370

Putnam VT Growth Opportunities Fund	2019	\$4,616,895	\$0	\$4,616,895
	2018	\$4,540,204	\$0	\$4,540,204
	2017	\$4,146,651	\$0	\$4,146,651
Putnam VT High Yield Fund	2019	\$1,029,357	\$0	\$1,029,357
	2018	\$1,145,797	\$0	\$1,145,797
	2017	\$1,308,853	\$0	\$1,308,853
Putnam VT Income Fund	2019	\$953,492	\$0	\$953,492
	2018	\$940,186	\$0	\$940,186
	2017	\$992,146	\$0	\$992,146
Putnam VT International Equity Fund	2019	\$1,513,419	\$0	\$1,513,419
	2018	\$1,736,958	\$0	\$1,736,958
	2017	\$1,820,305	\$0	\$1,820,305
Putnam VT International Value Fund	2019	\$464,453	\$0	\$464,453
	2018	\$555,116	\$0	\$555,116
	2017	\$594,239	\$0	\$594,239
Putnam VT Mortgage Securities Fund	2019	\$96,234	\$123,434	\$219,668
	2018	\$86,169	\$145,934	\$232,103
	2017	\$265,916	\$0	\$265,916
Putnam VT Multi-Asset Absolute Return Fund	2019	\$74,256	\$124,616	\$198,872
	2018	\$36,501	\$183,603	\$220,104
	2017	\$91,094	\$149,117	\$240,211
Putnam VT Multi-Cap Core Fund	2019	\$1,394,247	\$0	\$1,394,247
	2018	\$1,504,620	\$0	\$1,504,620
	2017	\$1,508,849	\$0	\$1,508,849
Putnam VT Research Fund	2019	\$250,379	\$0	\$250,379
	2018	\$264,395	\$0	\$264,395
	2017	\$270,192	\$0	\$270,192

Putnam VT Small Cap Growth Fund	2019	\$156,271	\$8,253	\$164,524
	2018	\$128,812	\$38,870	\$167,682
	2017	\$143,427	\$30,722	\$174,149
Putnam VT Small Cap Value Fund	2019	\$758,626	\$0	\$758,626
	2018	\$916,440	\$0	\$916,440
	2017	\$1,008,072	\$0	\$1,008,072
Putnam VT Sustainable Future Fund	2019	\$180,299	\$0	\$180,299
	2018	\$167,714	\$26,289	\$194,003
	2017	\$212,338	\$0	\$212,338
Putnam VT Sustainable Leaders Fund	2019	\$4,182,440	\$0	\$4,182,440
	2018	\$4,200,251	\$0	\$4,200,251
	2017	\$3,987,392	\$0	\$3,987,392

For Putnam VT Global Equity Fund, effective June 17, 2019 (the closing of the merger of **Putnam VT Global Utilities Fund** into the fund), Putnam Management agreed to waive 0.05% of the contractual management fee payable by the fund. The waiver is currently in place through April 30, 2021.

The amount of management fee waived for the 2017, 2018 and 2019 fiscal years for **Putnam VT Small Cap Growth Fund**, for the 2018 fiscal year of **Putnam VT Sustainable Future Fund** and for the 2019 fiscal year of **Putnam VT Global Asset Allocation Fund** resulted from arrangements set forth in "General expense limitation" under "Management – The Management Contract" in Part II of this SAI.

For **Putnam VT Emerging Markets Equity Fund**, the amount of the management fee waived in the 2017 fiscal year resulted from arrangements set forth in "General expense limitation" under "Management – The Management Contract" in Part II of this SAI. The amount of the management fee waived in the 2018 and 2019 fiscal year resulted from arrangements set forth in (1) "General expense limitation" under "Management – The Management Contract" in Part II of this SAI and (2) in "Fund-specific expense limitation" below.

Fund-specific expense limitation. Putnam Management has contractually agreed to waive fees and/or reimburse expenses of **Putnam VT Emerging Markets Equity Fund** through at least April 30, 2021 to the extent that the total annual operating expenses of the fund (exclusive of brokerage, interest, taxes, investment-related expenses,

extraordinary expenses, acquired fund fees and expenses and payments under the fund's distribution plan) would exceed 1.09% of the fund's average net assets. Please see "Management – The Management Contract – General expense limitation" in Part II of this SAI for a description of another expense limitation that may apply to a fund.

The amount of management fee waived for the 2018 and 2019 fiscal year for **Putnam VT Mortgage Securities Fund** resulted from arrangements set forth in (1) "General expense limitation" under "Management – The Management Contract" in Part II of this SAI and (2) in "Fund-specific expense limitation" below.

Fund-specific expense limitation. Putnam Management has contractually agreed to waive fees and/or reimburse expenses of **Putnam VT Mortgage Securities Fund** through at least April 30, 2021 to the extent that the total annual operating expenses of the fund (exclusive of brokerage, interest, taxes, investment-related expenses, extraordinary expenses, acquired fund fees and expenses and payments under the fund's distribution plan) would exceed 0.50% of the fund's average net assets. Please see "Management – The Management Contract – General expense limitation" in Part II of this SAI for a description of another expense limitation that may apply to a fund.

The amount of management fee waived for the 2017, 2018 and 2019 fiscal years for **Putnam VT Multi-Asset Absolute Return Fund** resulted from arrangements set forth in (1) "General expense limitation" under "Management – The Management Contract" in Part II of this SAI and (2) in "Fund-specific expense limitation" below.

Fund-specific expense limitation. Putnam Management has contractually agreed to waive fees and/or reimburse expenses of **Putnam VT Multi-Asset Absolute Return Fund** through at least April 30, 2021 to the extent that the total annual operating expenses of the fund (exclusive of brokerage, interest, taxes, investment-related expenses, extraordinary expenses, acquired fund fees and expenses and payments under the fund's distribution plan) would exceed 0.90% of the fund's average net assets. Please see "Management – The Management Contract – General expense limitation" in Part II of this SAI for a description of another expense limitation that may apply to a fund.

Brokerage commissions

The following table shows brokerage commissions paid during the fiscal years indicated:

Fund name	Fiscal year	Brokerage commissions
Putnam VT Diversified Income Fund	2019	\$8,248
	2018	\$5,035
	2017	\$564
Putnam VT Emerging Markets Equity Fund	2019	\$57,144
	2018	\$84,237
	2017	\$108,847
Putnam VT Equity Income Fund	2019	\$254,736
	2018	\$329,271
	2017	\$192,116
Putnam VT George Putnam Balanced Fund	2019	\$79,289
	2018	\$66,277
	2017	\$87,513
Putnam VT Global Asset Allocation Fund	2019	\$34,848
	2018	\$48,552
	2017	\$51,296
Putnam VT Global Equity Fund	2019	\$116,016
	2018	\$152,440
	2017	\$251,073
Putnam VT Global Health Care Fund	2019	\$128,559
	2018	\$47,969
	2017	\$87,242
Putnam VT Government Money Market Fund	2019	\$0
	2018	\$0
	2017	\$0
Putnam VT Growth Opportunities Fund	2019	\$217,009

	2018	\$351,940
	2017	\$508,033
Putnam VT High Yield Fund	2019	\$6,387
	2018	\$5,000
	2017	\$6,950
Putnam VT Income Fund	2019	\$16,028
	2018	\$13,998
	2017	\$3,157
Putnam VT International Equity Fund	2019	\$172,036
	2018	\$188,690
	2017	\$405,426
Putnam VT International Value Fund	2019	\$29,660
	2018	\$31,157
	2017	\$33,116
Putnam VT Mortgage Securities Fund	2019	\$1,418
	2018	\$1,783
	2017	\$949
Putnam VT Multi-Asset Absolute Return Fund	2019	\$20,434
	2018	\$14,009
	2017	\$12,020
Putnam VT Multi-Cap Core Fund	2019	\$76,521
	2018	\$116,050
	2017	\$133,621
Putnam VT Research Fund	2019	\$35,088
	2018	\$34,785
	2017	\$50,309
Putnam VT Small Cap	2019	\$14,154

Growth Fund

2018	\$41,158
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2017	\$73,273
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Putnam VT Small Cap Value Fund

2019	\$564,919
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2018	\$2,301,588
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2017	\$2,003,363
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Putnam VT Sustainable Future Fund

2019	\$21,998
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2018	\$30,724
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2017	\$49,651
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Putnam VT Sustainable Leaders Fund

2019	\$298,602
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2018	\$427,742
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2017	\$613,658
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Putnam VT Equity Income Fund and Putnam VT Small Cap Value Fund

The brokerage commissions for each fund's 2018 fiscal year were higher than the brokerage commissions for each fund's 2017 fiscal year due, in part, to higher portfolio turnover in 2018.

The brokerage commissions for **Putnam VT Small Cap Value Fund's** 2017 and 2018 fiscal years were higher than the brokerage commissions for the fund's 2019 fiscal year due, in part, to higher portfolio turnover in 2017 and 2018.

Putnam VT Emerging Markets Equity Fund, Putnam VT Growth Opportunities Fund and Putnam VT Multi-Cap Core Fund

The brokerage commissions for each fund's 2019 fiscal year were lower than the brokerage commissions for each fund's 2017 and 2018 fiscal years due, in part, to lower portfolio turnover in 2019.

Putnam VT George Putnam Fund

The brokerage commissions for the fund's 2018 fiscal year were lower than the brokerage commissions for the fund's 2017 and 2019 fiscal years due, in part, to decreased assets in the fund in 2018 and increased portfolio transactions in asset classes with lower brokerage commission rates in 2018.

Putnam VT Global Asset Allocation Equity Fund

The brokerage commissions for the fund's 2019 fiscal year were lower than the brokerage commissions for the fund's 2018 fiscal year due, in part, to increased portfolio transactions in asset classes with lower brokerage commission rates in 2019.

Putnam VT Global Equity Fund

The brokerage commissions for the fund's 2017 fiscal year were higher than the brokerage commissions for the fund's 2018 and 2019 fiscal years due, in part, to increased portfolio turnover for the fund in 2017. The brokerage commissions for the fund's 2019 fiscal year were lower than the brokerage commissions for the fund's 2018 fiscal year due, in part, to lower portfolio turnover in 2019.

Putnam VT Global Health Care Fund

The brokerage commissions for the fund's 2018 fiscal year were lower than the brokerage commissions for the fund's 2017 and 2019 fiscal years due, in part, to decreased portfolio turnover for the fund in 2018.

Putnam VT International Equity Fund and Putnam VT Sustainable Future Fund

The brokerage commissions for each fund's 2018 fiscal year were lower than the brokerage commissions for each fund's 2017 fiscal year due, in part, to decreased assets in each fund in 2018.

The brokerage commissions for **Putnam VT Sustainable Future Fund's** 2019 fiscal year were lower than the brokerage commissions for the fund's 2018 and 2017 fiscal years due, in part, to lower portfolio turnover in 2019.

Putnam VT Multi-Asset Absolute Return Fund

The brokerage commissions for the fund's 2019 fiscal year were higher than the brokerage commissions for the fund's 2017 and 2018 fiscal years due, in part, to increased portfolio turnover in 2019.

Putnam VT Research Fund, Putnam VT Small Cap Growth Fund and Putnam VT Sustainable Leaders Fund

The brokerage commissions for each fund's 2018 fiscal year were lower than the brokerage commissions for each fund's 2017 fiscal year due, in part, to decreased assets and decreased portfolio turnover in 2018.

The brokerage commissions for **Putnam VT Small Cap Growth Fund's and Putnam VT Sustainable Leaders Fund's** 2019 fiscal year were lower than the brokerage

commissions for each fund's 2018 and 2017 fiscal years due, in part, to decreased portfolio turnover in 2019.

Please see the *Financial highlights* section of each fund's most recent shareholder report for further information about a fund's portfolio turnover over recent periods.

The following table shows transactions placed with brokers and dealers during the most recent fiscal year to recognize research services received by Putnam Management and its affiliates:

Fund name	Dollar value of these transactions	Percentage of total transactions	Amount of commissions
Putnam VT Diversified Income Fund	\$6,002	1.19%	\$9
Putnam VT Emerging Markets Equity Fund	\$15,731,456	34.51%	\$12,224
Putnam VT Equity Income Fund	\$263,011,396	52.93%	\$80,759
Putnam VT George Putnam Balanced Fund	\$75,349,896	33.97%	\$23,705
Putnam VT Global Asset Allocation Fund	\$14,874,595	3.61%	\$1,651
Putnam VT Global Equity Fund	\$51,270,489	27.48%	\$23,671
Putnam VT Global Health Care Fund	\$111,822,642	45.32%	\$34,391
Putnam VT Government Money Market Fund	\$0	0.00%	\$0
Putnam VT Growth Opportunities Fund	\$341,930,701	40.53%	\$64,819
Putnam VT High Yield Fund	\$1,394,733	37.78%	\$1,157
Putnam VT Income Fund	\$0	0.00%	\$0
Putnam VT International Equity Fund	\$0	0.00%	\$0
Putnam VT International Value Fund	\$9,652,068	37.28%	\$6,308
Putnam VT Mortgage Securities Fund	\$0	0.00%	\$0
Putnam VT Multi-Asset Absolute Return Fund	\$10,953,718	3.53%	\$1,737
Putnam VT Multi-Cap Core Fund	\$36,893,470	27.51%	\$19,118
Putnam VT Research Fund	\$33,431,622	36.82%	\$10,371
Putnam VT Small Cap Growth Fund	\$7,219,631	29.15%	\$3,542
Putnam VT Small Cap Value Fund	\$162,065,590	38.99%	\$146,691
Putnam VT Sustainable Future Fund	\$14,687,302	36.47%	\$5,648

Putnam VT Sustainable Leaders Fund	\$241,258,857	45.50%	\$84,502
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At the end of fiscal 2019, the following funds held the following securities of their regular broker-dealers (or affiliates of such broker-dealers):

Fund Name	Broker-dealer or affiliates	Value of securities held
Putnam VT Diversified Income Fund	Bank of America Corp.	\$146,238
Putnam VT Equity Income Fund	Citigroup, Inc.	\$44,688,469
	Goldman Sachs Group, Inc. (The)	\$13,213,847
	JPMorgan Chase & Co.	\$66,115,468
	Wells Fargo & Co.	\$14,756,910
Putnam VT George Putnam Balanced Fund	Citigroup, Inc.	\$2,726,038
	Goldman Sachs Group, Inc. (The)	\$1,718,652
	JPMorgan Chase & Co.	\$2,143,588
	Morgan Stanley	\$492,248
	UBS AG	\$388,105
	Wells Fargo & Co.	\$594,821
Putnam VT Global Asset Allocation Fund	Bank of America Corp.	\$319,734
	Citigroup, Inc.	\$1,792,670
	Goldman Sachs Group, Inc. (The)	\$587,497
	JPMorgan Chase & Co.	\$2,442,594
	Morgan Stanley	\$814,775
	Wells Fargo & Co.	\$89,266
Putnam VT Global Equity Fund	Bank of America Corp.	\$3,836,796
	Citigroup, Inc.	\$2,173,008
Putnam VT High Yield Fund	Credit Suisse Group AG	\$542,750
Putnam VT Income Fund	Bank of America Corp.	\$1,237,498
	Citigroup, Inc.	\$1,304,604
	Credit Suisse Group AG	\$244,238
	Goldman Sachs Group, Inc. (The)	\$1,602,069
	JPMorgan Chase & Co.	\$1,377,760
	Morgan Stanley	\$911,453
	Royal Bank of Canada	\$155,304
Putnam VT Multi-Cap Core Fund	Bank of America Corp.	\$7,130,007
	Citigroup, Inc.	\$4,102,911
	Goldman Sachs Group, Inc. (The)	\$3,223,619

	JPMorgan Chase & Co.	\$7,587,124
	Morgan Stanley	\$1,686,960
	Raymond James Financial, Inc.	\$2,129,148
Putnam VT Research Fund	Bank of America Corp.	\$906,633
	Citigroup, Inc.	\$842,520
	Goldman Sachs Group, Inc. (The)	\$515,503
	JPMorgan Chase & Co.	\$569,310
Putnam VT Sustainable Leaders Fund	Bank of America Corp.	\$22,649,982

Administrative expense reimbursement

Each fund reimbursed Putnam Management for administrative services during fiscal 2019, including compensation of certain Trust officers and contributions to the Putnam Retirement Plan for their benefit, as follows.

Fund name	Total reimbursement	Portion of total reimbursement for compensation and contributions
Putnam VT Diversified Income Fund	\$5,909	\$4,062
Putnam VT Emerging Markets Equity Fund	\$937	\$644
Putnam VT Equity Income Fund	\$40,313	\$27,710
Putnam VT George Putnam Balanced Fund	\$4,869	\$3,347
Putnam VT Global Asset Allocation Fund	\$3,632	\$2,496
Putnam VT Global Equity Fund	\$5,296	\$3,640
Putnam VT Global Health Care Fund	\$3,974	\$2,732
Putnam VT Government Money Market Fund	\$2,539	\$1,745
Putnam VT Growth Opportunities Fund	\$24,397	\$16,770
Putnam VT High Yield Fund	\$5,275	\$3,626
Putnam VT Income Fund	\$7,070	\$4,860
Putnam VT International Equity Fund	\$6,385	\$4,389
Putnam VT International Value Fund	\$1,926	\$1,324
Putnam VT Mortgage Securities Fund	\$1,632	\$1,122
Putnam VT Multi-Asset Absolute Return Fund	\$789	\$542
Putnam VT Multi-Cap Core Fund	\$7,339	\$5,045
Putnam VT Research Fund	\$1,318	\$906
Putnam VT Small Cap Growth Fund	\$769	\$529
Putnam VT Small Cap Value Fund	\$3,504	\$2,409
Putnam VT Sustainable Future Fund	\$944	\$649
Putnam VT Sustainable Leaders Fund	\$22,089	\$15,183

Trustee responsibilities and fees

The Trustees are responsible for generally overseeing the conduct of the Trust's business. Subject to such policies as the Trustees may determine, Putnam Management furnishes a continuing investment program for the Trust and makes investment decisions on its behalf. Subject to the control of the Trustees, Putnam Management also manages the Trust's other affairs and business.

Except for Messrs. Joskow, Patterson, and Putnam, III, as shown below, the Trustees did not own variable annuity contracts or variable life insurance policies that invested in the funds as of December 31, 2019. However, each Trustee owns shares of the retail Putnam mutual funds that are counterparts to the Trust's various portfolios. The funds are offered only to separate accounts of insurance companies. Individual investors may not invest in the funds directly, but only through purchasing variable annuity contracts or variable life insurance policies that include the funds as investment options.

Fund name	Paul L. Joskow	Robert E. Patterson	George Putnam, III
Putnam VT Diversified Income Fund	\$1-\$10,000	-	-
Putnam VT Emerging Markets Equity Fund	\$1-\$10,000	-	-
Putnam VT Equity Income Fund	\$10,001-\$50,000	-	-
Putnam VT George Putnam Balanced Fund	\$1-\$10,000	-	-
Putnam VT Global Asset Allocation Fund	\$1-\$10,000	-	\$10,001-\$50,000
Putnam VT Global Equity Fund	\$1-\$10,000	-	-
Putnam VT Global Health Care Fund	-	-	-
Putnam VT Government Money Market Fund	-	-	-
Putnam VT Growth Opportunities Fund	\$1-\$10,000	-	-
Putnam VT High Yield Fund	\$1-\$10,000	\$10,001-\$50,000	-
Putnam VT Income Fund	\$1-\$10,000	-	-
Putnam VT International Equity Fund	\$1-\$10,000	-	-
Putnam VT International Value Fund	\$1-\$10,000	-	-
Putnam VT Mortgage Securities Fund	\$1-\$10,000	-	-
Putnam VT Multi-Asset Absolute Return Fund	-	-	-
Putnam VT Multi-Cap Core Fund	\$1-\$10,000	-	-
Putnam VT Research Fund	\$1-\$10,000	-	-
Putnam VT Small Cap Growth Fund	\$1-\$10,000	-	-
Putnam VT Small Cap Value Fund	\$1-\$10,000	-	-
Putnam VT Sustainable Future Fund	\$1-\$10,000	-	-
Putnam VT Sustainable Leaders Fund	\$1-\$10,000	-	-

The table below shows the value of each Trustee's holdings in all of the Putnam funds as of December 31, 2019.

Name of Trustee	Aggregate dollar range of shares held in all of the Putnam funds overseen by Trustee
<i>Independent Trustees</i>	
Liaquat Ahamed	over \$100,000
Ravi Akhoury	over \$100,000
Barbara M. Baumann	over \$100,000
Jameson A. Baxter	over \$100,000
Katinka Domotorffy	over \$100,000
Catharine Bond Hill	over \$100,000
Paul L. Joskow	over \$100,000
Kenneth R. Leibler	over \$100,000
Robert E. Patterson	over \$100,000
George Putnam, III	over \$100,000
Manoj P. Singh	over \$100,000
* Mona K. Sutphen	None
<i>Interested Trustee</i>	
** Robert L. Reynolds	over \$100,000

* Appointed to the Board of Trustees on April 1, 2020.

** Trustee who is an "interested person" (as defined in the Investment Company Act of 1940) of the funds and Putnam Management. Mr. Reynolds is deemed an "interested person" by virtue of his positions as an officer of the funds and Putnam Management. Mr. Reynolds is the President and Chief Executive Officer of Putnam Investments, LLC and President of your fund and each of the other Putnam funds. None of the other Trustees is an "interested person."

Each Independent Trustee of the funds receives an annual retainer fee and an additional fee for each Trustee meeting attended. Independent Trustees also are reimbursed for expenses they incur relating to their services as Trustees. All of the current Independent Trustees of the funds are Trustees of all the Putnam funds and receive fees for their services.

The Trustees periodically review their fees to ensure that such fees continue to be appropriate in light of their responsibilities as well as in relation to fees paid to trustees of other mutual fund complexes. The Board Policy and Nominating Committee, which

consists solely of Independent Trustees of the funds, estimates that committee and Trustee meeting time, together with the appropriate preparation, requires the equivalent of at least four business days per regular Trustee meeting. The standing committees of the Board of Trustees, and the number of times each committee met, during your fund's most recently completed fiscal year, are shown in the table below:

Audit, Compliance and Distributions Committee	11
Board Policy and Nominating Committee	6
Brokerage Committee	4
Contract Committee	9
Executive Committee	1
Investment Oversight Committees	
Investment Oversight Committee A	7
Investment Oversight Committee B	7
Pricing Committee	6

The following table shows the year each Trustee was first elected a Trustee of the Putnam funds, the fees paid to each Trustee by each fund for fiscal 2019, and the fees paid to each Trustee by all of the Putnam funds for services rendered during calendar year 2019. Ms. Sutphen is not included in the table because she did not serve as a Trustee during the relevant period.

COMPENSATION TABLES

Aggregate compensation from:

Trustee/Year	Putnam VT Diversified Income Fund	Putnam VT Emerging Markets Equity Fund	Putnam VT Equity Income Fund	Putnam VT George Putnam Balanced Fund	Putnam VT Global Asset Allocation Fund	Putnam VT Global Equity Fund
<i>Independent Trustees</i>						
Liaquat Ahamed/2012(3)	\$771	\$123	\$5,200	\$600	\$482	\$671
Ravi Akhouri/2009	786	125	5,304	612	492	682
Barbara M. Baumann/2010(3)(4)	846	135	5,711	659	530	734
Katinka Domotorffy/2012(3)	786	125	5,304	611	492	682
Catharine Bond Hill/2017(3)	786	125	5,304	611	492	682
Paul L. Joskow/1997(3)	786	125	5,304	611	492	682
Kenneth R. Leibler/2006(5)	1,074	171	7,257	839	672	936
Robert E. Patterson/1984	711	113	4,791	552	445	613
George Putnam, III/1984(6)	846	135	5,711	659	530	734
Manoj P. Singh/2017	786	125	5,304	612	492	682
<i>Interested Trustee</i>						
Robert L. Reynolds/2008(7)	N/A	N/A	N/A	N/A	N/A	N/A

Trustee/Year	Putnam VT Global Health Care Fund	Putnam VT Government Money Market Fund	Putnam VT Growth Opportunities Fund	Putnam VT High Yield Fund	Putnam VT Income Fund
<i>Independent Trustees</i>					
Liaquat Ahamed/2012(3)	\$510	\$343	\$3,112	\$696	\$922
Ravi Akhouri/2009	521	350	3,175	710	939
Barbara M. Baumann/2010(3)(4)	561	377	3,418	764	1,011
Katinka Domotorffy/2012(3)	521	350	3,175	710	939
Catharine Bond Hill/2017(3)	521	350	3,175	710	939
Paul L. Joskow/1997(3)	521	350	3,175	710	939
Kenneth R. Leibler/2006(5)	712	478	4,346	971	1,285
Robert E. Patterson/1984	470	317	2,862	642	850
George Putnam, III/1984(6)	561	377	3,418	764	1,011
Manoj P. Singh/2017	521	350	3,175	710	939
<i>Interested Trustee</i>					
Robert L. Reynolds/2008(7)	N/A	N/A	N/A	N/A	N/A

Trustee/Year	Putnam VT International Equity Fund	Putnam VT International Value Fund	Putnam VT Multi- Asset Absolute Return Fund	Putnam VT Mortgage Securities Fund	Putnam VT Multi-Cap Core Fund
<i>Independent Trustees</i>					
Liaquat Ahamed/2012(3)	\$823	\$256	\$107	\$213	\$944
Ravi Akhoury/2009	839	261	109	217	962
Barbara M. Baumann/2010(3)(4)	904	281	117	234	1,036
Katinka Domotorffy/2012(3)	839	261	109	217	962
Catharine Bond Hill/2017(3)	839	261	109	217	962
Paul L. Joskow/1997(3)	839	261	109	217	962
Kenneth R. Leibler/2006(5)	1,148	357	148	297	1,317
Robert E. Patterson/1984	758	236	98	197	869
George Putnam, III/1984(6)	904	281	117	234	1,036
Manoj P. Singh/2017	839	261	109	217	962
<i>Interested Trustee</i>					
Robert L. Reynolds/2008(7)	N/A	N/A	N/A	N/A	N/A

Trustee/Year	Putnam VT Research Fund	Putnam VT Small Cap Growth Fund	Putnam VT Small Cap Value Fund	Putnam VT Sustainable Future Fund	Putnam VT Sustainable Leaders Fund
<i>Independent Trustees</i>					
Liaquat Ahamed/2012(3)	\$170	\$97	\$456	\$123	\$2,821
Ravi Akhoury/2009	173	99	465	125	2,877
Barbara M. Baumann/2010(3)(4)	187	107	501	135	3,098
Katinka Domotorffy/2012(3)	173	99	465	125	2,877
Catharine Bond Hill/2017(3)	173	99	465	125	2,877
Paul L. Joskow/1997(3)	173	99	465	125	2,877
Kenneth R. Leibler/2006(5)	237	136	636	171	3,940
Robert E. Patterson/1984	156	89	420	113	2,594
George Putnam, III/1984(6)	187	107	501	135	3,098
Manoj P. Singh/2017	173	99	465	125	2,877
<i>Interested Trustee</i>					
Robert L. Reynolds/2008(7)	N/A	N/A	N/A	N/A	N/A

Pension or retirement benefits accrued as part of fund expenses from:

Trustee/Year	Putnam VT Diversified Income Fund	Putnam VT Emerging Markets Equity Fund	Putnam VT Equity Income Fund	Putnam VT George Putnam Balanced Fund	Putnam VT Global Asset Allocation Fund	Putnam VT Global Equity Fund
<i>Independent Trustees</i>						
Liaquat Ahamed/2012(3)	N/A	N/A	N/A	N/A	N/A	N/A
Ravi Akhoury/2009	N/A	N/A	N/A	N/A	N/A	N/A
Barbara M. Baumann/2010(3)(4)	N/A	N/A	N/A	N/A	N/A	N/A
Katinka Domotorffy/2012(3)	N/A	N/A	N/A	N/A	N/A	N/A
Catharine Bond Hill/2017(3)	N/A	N/A	N/A	N/A	N/A	N/A
Paul L. Joskow/1997(3)	\$0	\$0	\$0	\$0	\$0	\$0
Kenneth R. Leibler/2006(5)	N/A	N/A	N/A	N/A	N/A	N/A
Robert E. Patterson/1984	0	0	0	0	0	0
George Putnam, III/1984(6)	0	0	0	0	0	0
Manoj P. Singh/2017	N/A	N/A	N/A	N/A	N/A	N/A
<i>Interested Trustee</i>						
Robert L. Reynolds/2008(7)	N/A	N/A	N/A	N/A	N/A	N/A

Trustee/Year	Putnam VT Global Health Care Fund	Putnam VT Government Money Market Fund	Putnam VT Growth Opportunities Fund	Putnam VT High Yield Fund	Putnam VT Income Fund
<i>Independent Trustees</i>					
Liaquat Ahamed/2012(3)	N/A	N/A	N/A	N/A	N/A
Ravi Akhoury/2009	N/A	N/A	N/A	N/A	N/A
Barbara M. Baumann/2010(3)(4)	N/A	N/A	N/A	N/A	N/A
Katinka Domotorffy/2012(3)	N/A	N/A	N/A	N/A	N/A
Catharine Bond Hill/2017(3)	N/A	N/A	N/A	N/A	N/A
Paul L. Joskow/1997(3)	\$0	\$0	\$0	\$0	\$0
Kenneth R. Leibler/2006(5)	N/A	N/A	N/A	N/A	N/A
Robert E. Patterson/1984	0	0	0	0	0
George Putnam, III/1984(6)	0	0	0	0	0
Manoj P. Singh/2017	N/A	N/A	N/A	N/A	N/A
<i>Interested Trustee</i>					
Robert L. Reynolds/2008(7)	N/A	N/A	N/A	N/A	N/A

Trustee/Year	Putnam VT International Equity Fund	Putnam VT International Value Fund	Putnam VT Multi- Asset Absolute Return Fund	Putnam VT Mortgage Securities Fund	Putnam VT Multi-Cap Core Fund
<i>Independent Trustees</i>					
Liaquat Ahamed/2012(3)	N/A	N/A	N/A	N/A	N/A
Ravi Akhouri/2009	N/A	N/A	N/A	N/A	N/A
Barbara M. Baumann/2010(3)(4)	N/A	N/A	N/A	N/A	N/A
Katinka Domotorffy/2012(3)	N/A	N/A	N/A	N/A	N/A
Catharine Bond Hill/2017(3)	N/A	N/A	N/A	N/A	N/A
Paul L. Joskow/1997(3)	\$0	\$0	\$4	\$0	\$0
Kenneth R. Leibler/2006(5)	N/A	N/A	N/A	N/A	N/A
Robert E. Patterson/1984	0	0	6	0	0
George Putnam, III/1984(6)	0	0	6	0	0
Manoj P. Singh/2017	N/A	N/A	N/A	N/A	N/A
<i>Interested Trustee</i>					
Robert L. Reynolds/2008(7)	N/A	N/A	N/A	N/A	N/A

Trustee/Year	Putnam VT Research Fund	Putnam VT Small Cap Growth Fund	Putnam VT Small Cap Value Fund	Putnam VT Sustainable Future Fund	Putnam VT Sustainable Leaders Fund
<i>Independent Trustees</i>					
Liaquat Ahamed/2012(3)	N/A	N/A	N/A	N/A	N/A
Ravi Akhouri/2009	N/A	N/A	N/A	N/A	N/A
Barbara M. Baumann/2010(3)(4)	N/A	N/A	N/A	N/A	N/A
Katinka Domotorffy/2012(3)	N/A	N/A	N/A	N/A	N/A
Catharine Bond Hill/2017(3)	N/A	N/A	N/A	N/A	N/A
Paul L. Joskow/1997(3)	\$0	\$0	\$0	\$0	\$0
Kenneth R. Leibler/2006(5)	N/A	N/A	N/A	N/A	N/A
Robert E. Patterson/1984	0	0	0	0	0
George Putnam, III/1984(6)	0	0	0	0	0
Manoj P. Singh/2017	N/A	N/A	N/A	N/A	N/A
<i>Interested Trustee</i>					
Robert L. Reynolds/2008(7)	N/A	N/A	N/A	N/A	N/A

Trustee/Year	Estimated annual benefits from all Putnam funds upon retirement (1)	Total compensation from all Putnam funds (2)
<i>Independent Trustees</i>		
Liaquat Ahamed/2012(3)	N/A	\$318,750
Ravi Akhoury/2009	N/A	\$325,000
Barbara M. Baumann/2010(3)(4)	N/A	\$350,000
Katinka Domotorffy/2012(3)	N/A	\$325,000
Catharine Bond Hill/2017(3)	N/A	\$325,000
Paul L. Joskow/1997(3)	\$113,417	\$325,000
Kenneth R. Leibler/2006(5)	N/A	\$445,000
Robert E. Patterson/1984	\$106,542	\$293,750
George Putnam, III/1984(6)	\$130,333	\$350,000
Manoj P. Singh/2017	N/A	\$325,000
<i>Interested Trustee</i>		
Robert L. Reynolds/2008(7)	N/A	N/A

(1) Estimated benefits for each Trustee are based on Trustee fee rates for calendar years 2003, 2004 and 2005.

(2) As of December 31, 2019, there were 91 funds in the Putnam family.

(3) Certain Trustees are also owed compensation deferred pursuant to a Trustee Compensation Deferral Plan. As of December 31, 2019, the total amounts of deferred compensation payable by each fund, including income earned on such amounts, to these Trustees were:

	Mr. Ahamed	Ms. Baumann	Ms. Domotorffy	Dr. Hill	Dr. Joskow
Putnam VT Diversified Income Fund	\$2,804	\$3,245	\$2,784	\$792	\$13,697
Putnam VT Emerging Markets Equity Fund	\$1,354	\$1,567	\$1,344	\$382	\$6,614
Putnam VT Equity Income Fund	\$21,001	\$24,299	\$20,846	\$5,927	\$102,573
Putnam VT George Putnam Balanced Fund	\$2,128	\$2,463	\$2,113	\$601	\$10,396
Putnam VT Global Asset Allocation Fund	\$3,250	\$3,760	\$3,226	\$917	\$15,873
Putnam VT Global Equity Fund	\$5,458	\$6,316	\$5,418	\$1,541	\$26,660
Putnam VT Global Health Care Fund	\$1,659	\$1,920	\$1,647	\$468	\$8,104
Putnam VT Government Money Market Fund	\$2,066	\$2,390	\$2,050	\$583	\$10,089
Putnam VT Growth Opportunities Fund	\$14,208	\$16,440	\$14,104	\$4,010	\$69,396
Putnam VT High Yield Fund	\$4,631	\$5,358	\$4,597	\$1,307	\$22,619
Putnam VT Income Fund	\$4,752	\$5,499	\$4,717	\$1,341	\$23,212
Putnam VT International Equity Fund	\$3,357	\$3,884	\$3,332	\$948	\$16,396
Putnam VT International Value Fund	\$1,646	\$1,905	\$1,634	\$465	\$8,041
Putnam VT Mortgage Securities Fund	\$1,474	\$1,705	\$1,463	\$416	\$7,197
Putnam VT Multi-Asset Absolute Return Fund	\$88	\$102	\$88	\$25	\$431
Putnam VT Multi-Cap Core Fund	\$3,079	\$3,562	\$3,056	\$869	\$15,037
Putnam VT Research Fund	\$1,295	\$1,499	\$1,286	\$366	\$6,326
Putnam VT Small Cap Growth Fund	\$674	\$779	\$669	\$190	\$3,290
Putnam VT Small Cap Value Fund	\$2,173	\$2,514	\$2,157	\$613	\$10,612
Putnam VT Sustainable Future Fund	\$788	\$912	\$783	\$223	\$3,851
Putnam VT Sustainable Leaders Fund	\$12,738	\$14,738	\$12,644	\$3,595	\$62,214

(4) Includes additional compensation to Ms. Baumann for service as Chair of the Audit, Compliance and Distributions Committee.

(5) Includes additional compensation to Mr. Leibler for service as Chair of the Trustees of the Putnam funds.

(6) Includes additional compensation to Mr. Putnam for service as Chair of the Contract Committee.

(7) Mr. Reynolds is an "interested person" of the Trust and Putnam Management.

Under a Retirement Plan for Trustees of the Putnam funds (the "Plan"), each Trustee who retires with at least five years of service as a Trustee of the funds is entitled to receive an annual retirement benefit equal to one-half of the average annual attendance and retainer fees paid to such Trustee for calendar years 2003, 2004 and 2005. This retirement benefit is payable during a Trustee's lifetime, beginning the year following retirement, for the number of years of service through December 31, 2006. A death benefit, also available under the Plan, ensures that the Trustee and his or her beneficiaries will receive benefit payments for the lesser of an aggregate period of (i) ten years, or (ii) such Trustee's total years of service.

The Plan Administrator (currently the Board Policy and Nominating Committee) may terminate or amend the Plan at any time, but no termination or amendment will result in a reduction in the amount of benefits (i) currently being paid to a Trustee at the time of such termination or amendment, or (ii) to which a current Trustee would have been entitled had he or she retired immediately prior to such termination or amendment. The Trustees have terminated the Plan with respect to any Trustee first elected to the Board after 2003.

For additional information concerning the Trustees, see "Management" in Part II of this SAI.

Share ownership

At March 31, 2020, the officers and Trustees as a group owned directly no shares of the Trust or any fund thereof. As of that date, less than 1% of the value of the accumulation units with respect to any fund was attributable to the officers and Trustees of the Trust, as a group, owning variable annuity contracts or variable life insurance policies issued by the insurers listed in the following tables or by other insurers that may hold shares of a fund. Except as noted below, no person owned of record or to the knowledge of the Trust beneficially 5% or more of any class of the shares of any fund of the Trust.

Fund	Class	Shareholder name and address	Percentage owned
Putnam VT Diversified Income	IA	Talcott Resolution Life & Annuity (21)	46.98%
Putnam VT Diversified Income	IA	Talcott Resolution Life (22)	44.70%
Putnam VT Diversified Income	IA	Talcott Resolution Life & Annuity (21)	5.19%
Putnam VT Diversified Income	IB	Talcott Resolution Life & Annuity (21)	34.58%
Putnam VT Diversified Income	IB	AXA Equitable Life Insurance Co. (5)	21.31%
Putnam VT Diversified Income	IB	Talcott Resolution Life (22)	14.98%

Putnam VT Diversified Income	IB	Allstate Life Insurance Company (1)	9.81%
Putnam VT Diversified Income	IB	Talcott Resolution Life & Annuity (21)	5.22%
Putnam VT Emerging Markets Equity Fund	IA	Talcott Resolution Life & Annuity (21)	46.82%
Putnam VT Emerging Markets Equity Fund	IA	Talcott Resolution Life (22)	42.59%
Putnam VT Emerging Markets Equity Fund	IA	Talcott Resolution Life & Annuity (21)	27.93%
Putnam VT Emerging Markets Equity Fund	IB	Allstate Life Insurance Company (1)	22.01%
Putnam VT Emerging Markets Equity Fund	IB	Talcott Resolution Life & Annuity (21)	6.40%
Putnam VT Emerging Markets Equity Fund	IB	Allstate Life of NY (2)	58.22%
Putnam VT Equity Income Fund	IA	Talcott Resolution Life (22)	36.66%
Putnam VT Equity Income Fund	IA	Talcott Resolution Life & Annuity (21)	51.65%
Putnam VT Equity Income Fund	IB	Allstate Life Insurance Company (1)	31.66%
Putnam VT Equity Income Fund	IB	Guardian Insurance & Annuity (9)	6.09%
Putnam VT Equity Income Fund	IB	Talcott Resolution Life & Annuity (21)	46.87%
Putnam VT George Putnam Balanced Fund	IA	Talcott Resolution Life & Annuity (21)	44.89%
Putnam VT George Putnam Balanced Fund	IA	Talcott Resolution Life (22)	39.06%
Putnam VT George Putnam Balanced Fund	IB	Lincoln Life Insurance Company (15)	21.82%
Putnam VT George Putnam Balanced Fund	IB	Allstate Life Insurance Company (1)	14.76%
Putnam VT George Putnam Balanced Fund	IB	Talcott Resolution Life & Annuity (21)	10.80%
Putnam VT Global Asset Allocation Fund	IA	Talcott Resolution Life (22)	7.23%
Putnam VT Global Asset Allocation Fund	IA	Talcott Resolution Life & Annuity (21)	5.34%
Putnam VT Global Asset Allocation Fund	IB	Allstate Life Insurance Company (1)	46.12%
Putnam VT Global Asset Allocation Fund	IB	Talcott Resolution Life & Annuity (21)	43.61%
Putnam VT Global Asset Allocation Fund	IB	AXA Equitable Life Insurance Co. (5)	5.69%
Putnam VT Global Asset Allocation Fund	IB	Great- West Life & Annuity Co. (8)	43.34%
Putnam VT Global Asset Allocation Fund	IB	Talcott Resolution Life (22)	22.44%
Putnam VT Global Asset Allocation Fund	IB	Allstate Life of NY (2)	20.28%
Putnam VT Global Equity Fund	IA	Talcott Resolution Life (21)	47.28%
Putnam VT Global Equity Fund	IA	Talcott Resolution Life & Annuity (21)	40.57%
Putnam VT Global Equity Fund	IA	Talcott Resolution Life & Annuity (21)	6.73%
Putnam VT Global Equity Fund	IB	Allstate Life Insurance Company (1)	71.35%
Putnam VT Global Equity Fund	IB	Allstate Life of NY (2)	8.04%
Putnam VT Global Equity Fund	IB	Great- West Life & Annuity Co. (8)	6.89%

Putnam VT Global Health Care Fund	IA	Talcott Resolution Life (22)	47.13%
Putnam VT Global Health Care Fund	IA	Talcott Resolution Life & Annuity (21)	44.90%
Putnam VT Global Health Care Fund	IA	Talcott Resolution Life & Annuity (21)	76.03%
Putnam VT Global Health Care Fund	IB	Riversource Life Insurance Company (20)	13.65%
Putnam VT Global Health Care Fund	IB	Lincoln National Variable (13)	47.94%
Putnam VT Global Health Care Fund	IB	Allstate Life Insurance Company (1)	38.25%
Putnam VT Government Money Market Fund	IA	Talcott Resolution Life & Annuity (21)	7.19%
Putnam VT Government Money Market Fund	IA	Talcott Resolution Life (22)	40.10%
Putnam VT Government Money Market Fund	IB	Allstate Life Insurance Company (1)	12.93%
Putnam VT Government Money Market Fund	IB	Allstate Life of NY (2)	11.57%
Putnam VT Growth Opportunities Fund	IA	Talcott Resolution Life (22)	8.92%
Putnam VT Growth Opportunities Fund	IA	Talcott Resolution Life & Annuity (21)	24.76%
Putnam VT Growth Opportunities Fund	IA	Talcott Resolution Life & Annuity (21)	24.69%
Putnam VT Growth Opportunities Fund	IB	Allstate Life Insurance Company (1)	24.42%
Putnam VT Growth Opportunities Fund	IB	Minnesota Life (15)	9.68%
Putnam VT Growth Opportunities Fund	IB	Principal Financial Group PFLX (18)	6.20%
Putnam VT Growth Opportunities Fund	IB	Talcott Resolution Life & Annuity (21)	39.08%
Putnam VT High Yield Fund	IA	Talcott Resolution Life & Annuity (21)	21.86%
Putnam VT High Yield Fund	IA	Talcott Resolution Life (22)	14.78%
Putnam VT High Yield Fund	IA	CMFG Group (6)	5.41%
Putnam VT High Yield Fund	IA	Talcott Resolution Life & Annuity (21)	5.24%
Putnam VT High Yield Fund	IA	MetLife (Paragon) (14)	38.01%
Putnam VT High Yield Fund	IB	Allstate Life Insurance Company (1)	31.36%
Putnam VT High Yield Fund	IB	Talcott Resolution Life & Annuity (21)	12.77%
Putnam VT High Yield Fund	IB	Riversource Life Insurance Company (20)	7.02%
Putnam VT High Yield Fund	IB	Talcott Resolution Life & Annuity (21)	33.22%
Putnam VT High Yield Fund	IB	Allstate Life of NY (2)	17.84%
Putnam VT Income Fund	IA	Talcott Resolution Life (22)	10.25%
Putnam VT Income Fund	IA	Talcott Resolution Life & Annuity (21)	10.00%
Putnam VT Income Fund	IA	Talcott Resolution Life & Annuity (21)	7.76%
Putnam VT Income Fund	IA	MetLife (Paragon) (14)	48.95%
Putnam VT Income Fund	IB	Allstate Life Insurance Company (1)	44.13%
Putnam VT Income Fund	IB	Nationwide Life Insurance Company (16)	5.62%
Putnam VT Income Fund	IB	Jefferson National Life (10)	79.46%
Putnam VT Income Fund	IB	Talcott Resolution Life & Annuity (21)	7.70%

Putnam VT Income Fund	IB	Lincoln Life Insurance Company (1)	5.30%
Putnam VT International Equity Fund	IA	Talcott Resolution Life & Annuity (21)	52.41%
Putnam VT International Equity Fund	IA	Talcott Resolution Life (22)	34.99%
Putnam VT International Equity Fund	IA	Talcott Resolution Life & Annuity (21)	5.49%
Putnam VT International Equity Fund	IA	Talcott Resolution Life (22)	34.43%
Putnam VT International Equity Fund	IA	Talcott Resolution Life (22)	20.00%
Putnam VT International Equity Fund	IB	Allstate Life Insurance Company (1)	10.41%
Putnam VT International Equity Fund	IB	Talcott Resolution Life & Annuity (21)	9.50%
Putnam VT International Equity Fund	IB	Nationwide Life Insurance Co. (16)	7.78%
Putnam VT International Equity Fund	IB	Riversource Life Insurance Company (20)	6.52%
Putnam VT International Equity Fund	IB	Talcott Resolution Life (22)	35.18%
Putnam VT International Equity Fund	IB	Allstate Northbrook Life (3)	26.66%
Putnam VT International Equity Fund	IB	Minnesota Life (15)	21.41%
Putnam VT International Value Fund	IA	Talcott Resolution Life & Annuity (21)	9.10%
Putnam VT International Value Fund	IA	Talcott Resolution Life (22)	5.01%
Putnam VT International Value Fund	IA	Talcott Resolution Life & Annuity (21)	22.79%
Putnam VT International Value Fund	IB	Talcott Resolution Life & Annuity (21)	17.65%
Putnam VT International Value Fund	IB	Allstate Life Insurance Company (1)	12.63%
Putnam VT International Value Fund	IB	Nationwide Life Insurance Co. (16)	10.80%
Putnam VT International Value Fund	IB	Amer Gen Corporate America (4)	9.97%
Putnam VT International Value Fund	IB	Talcott Resolution Life (22)	7.50%
Putnam VT International Value Fund	IB	Lincoln Benefit Life Co (11)	6.26%
Putnam VT Mortgage Securities Fund	IA	Talcott Resolution Life & Annuity (21)	53.50%
Putnam VT Mortgage Securities Fund	IA	Talcott Resolution Life (22)	43.39%
Putnam VT Mortgage Securities Fund	IB	Allstate Life Insurance Company (1)	36.39%
Putnam VT Mortgage Securities Fund	IB	Great- West Life & Annuity Co. (8)	13.14%
Putnam VT Mortgage Securities Fund	IB	Talcott Resolution Life & Annuity (21)	11.74%
Putnam VT Mortgage Securities Fund	IB	Jefferson National Life (10)	9.55%

Putnam VT Mortgage Securities Fund	IB	Great- West Life & Annuity Co. (8)	5.13%
Putnam VT Multi-Asset Absolute Return	IA	Lincoln Life Insurance Company (12)	80.80%
Putnam VT Multi-Asset Absolute Return	IA	Putnam Investments Holdings, LLC (19)	19.20%
Putnam VT Multi-Asset Absolute Return	IB	Delaware Life Insurance Company (7)	55.21%
Putnam VT Multi-Asset Absolute Return	IB	Lincoln Life Insurance Company (12)	10.29%
Putnam VT Multi-Asset Absolute Return	IB	Jefferson National Life (10)	9.33%
Putnam VT Multi-Asset Absolute Return	IB	AXA Equitable Life Insurance Co. (5)	9.01%
Putnam VT Multi-Asset Absolute Return	IB	Guardian Insurance & Annuity (9)	5.64%
Putnam VT Multi-Cap Core Fund	IA	Talcott Resolution Life (22)	49.96%
Putnam VT Multi-Cap Core Fund	IA	Talcott Resolution Life & Annuity (21)	43.29%
Putnam VT Multi-Cap Core Fund	IB	Guardian Insurance & Annuity (9)	52.25%
Putnam VT Multi-Cap Core Fund	IB	Allstate Life Insurance Company (1)	22.64%
Putnam VT Multi-Cap Core Fund	IB	Talcott Resolution Life & Annuity (21)	9.01%
Putnam VT Multi-Cap Core Fund	IB	Guardian Insurance & Annuity (9)	7.52%
Putnam VT Multi-Cap Core Fund	IB	Talcott Resolution Life (22)	5.79%
Putnam VT Research Fund	IA	Talcott Resolution Life (22)	49.56%
Putnam VT Research Fund	IA	Talcott Resolution Life & Annuity (21)	46.61%
Putnam VT Research Fund	IB	Allstate Life Insurance Company (1)	76.38%
Putnam VT Research Fund	IB	Allstate Life of NY (2)	5.87%
Putnam VT Research Fund	IB	Talcott Resolution Life & Annuity (21)	5.11%
Putnam VT Research Fund	IB	AXA Equitable Life Insurance Co. (5)	5.09%
Putnam VT Small Cap Growth Fund	IA	Talcott Resolution Life & Annuity (21)	52.67%
Putnam VT Small Cap Growth Fund	IA	Talcott Resolution Life (22)	47.33%
Putnam VT Small Cap Growth Fund	IB	Talcott Resolution Life & Annuity (21)	54.94%
Putnam VT Small Cap Growth Fund	IB	Allstate Life Insurance Company (1)	23.93%
Putnam VT Small Cap Growth Fund	IB	Talcott Resolution Life & Annuity (21)	7.33%
Putnam VT Small Cap Growth Fund	IB	Talcott Resolution Life (22)	6.61%
Putnam Small Cap Value Fund	IA	Talcott Resolution Life & Annuity (21)	47.44%
Putnam Small Cap Value Fund	IA	Talcott Resolution Life (22)	44.44%
Putnam Small Cap Value Fund	IA	Great- West Life & Annuity Co. (8)	5.71%
Putnam Small Cap Value Fund	IB	Talcott Resolution Life & Annuity (21)	24.86%
Putnam Small Cap Value Fund	IB	Allstate Life Insurance Company (1)	19.93%
Putnam Small Cap Value Fund	IB	Talcott Resolution Life (22)	15.50%
Putnam Small Cap Value Fund	IB	Northbrook Life Insurance Company (17)	10.25%
Putnam Small Cap Value Fund	IB	Talcott Resolution Life & Annuity (21)	8.48%
Putnam VT Sustainable Future Fund	IA	Talcott Resolution Life & Annuity (21)	50.00%
Putnam VT Sustainable Future Fund	IA	Talcott Resolution Life (22)	47.52%
Putnam VT Sustainable Future Fund	IB	Allstate Life Insurance Company (1)	69.01%
Putnam VT Sustainable Future Fund	IB	Talcott Resolution Life & Annuity (21)	20.37%
Putnam VT Sustainable Future Fund	IB	Talcott Resolution Life (22)	5.92%
Putnam VT Sustainable Leaders Fund	IA	Riversource Life Insurance Company (20)	30.44%
Putnam VT Sustainable Leaders Fund	IA	Talcott Resolution Life (22)	27.88%

Putnam VT Sustainable Leaders Fund	IA	Talcott Resolution Life & Annuity (21)	27.72%
Putnam VT Sustainable Leaders Fund	IA	Talcott Resolution Life & Annuity (21)	5.19%
Putnam VT Sustainable Leaders Fund	IB	Allstate Life Insurance Company (1)	46.55%
Putnam VT Sustainable Leaders Fund	IB	Riversource Life Insurance Company (20)	22.93%
Putnam VT Sustainable Leaders Fund	IB	Talcott Resolution Life & Annuity (21)	13.89%

*Shareholder may be deemed to control the indicated fund.

The addresses for the shareholders listed above are:

- (1) Allstate Life Insurance Company, 3100 Sanders Road, Northbrook, IL 60062
- (2) Allstate Life of NY, 3100 Sanders Road, Northbrook, IL 60062
- (3) Allstate Northbrook Life, 3100 Sanders Road, Northbrook, IL 60062
- (4) Amer Gen Corporate America, 1610 Des Peres Rd. Ste 370 Saint Louis, MO 63131-1830
- (5) AXA Equitable Life Insurance Co., 290 Avenue of the Americas, NY, NY 10104-1472
- (6) CMFG Group, 2000 Heritage Way, Waverly, IA 50677
- (7) Delaware Life Insurance Company, 1601 Trapelo Road, Suite 30, Waltham, MA 02451-7360
- (8) Great- West Life & Annuity Co., 8515 E. Orchard Rd., Greenwood, CO 80111-5002
- (9) Guardian Insurance & Annuity, 6255 Sterners Way, Bethlehem PA 18017
- (10) Jefferson National Life, 10350 Ormsby Park Pl. STE. 600, Louisville, KY 40223-6175
- (11) Lincoln Benefit Life, C/O Allstate Financial, 544 Lakeview Pkwy, Vernon Hills, IL 60061
- (12) Lincoln Life Insurance Company, 1300, 1300 S. Clinton St., Fort Wayne, IN 46802
- (13) Lincoln National Variable, Universal Life, 1300 S. Clinton St., Fort Wayne, IN 46802
- (14) MetLife (Paragon), 190 Carondelet PLZ, St. Louis, MO 63105-3443
- (15) Minnesota Life, 400 Robert St. N STE A, St. Paul, MN 55101-2099
- (16) Nationwide Life Insurance Co., P.O. Box 182029, Columbus, OH 43218-2019
- (17) Northbrook Life Insurance Company, 3100 Sanders Rd Ste K4A, Northbrook IL 60062
- (18) Principal Financial Group PFLX, 711 High St, Des Moines, IA 50392
- (19) Putnam Investments Holdings. LLC; 1 Post Office Sq., Boston, MA 02109-2199
- (20) Riversource Life Insurance Company, 70100 Ameriprise Financial Center, Minneapolis, MN 55474
- (21) Talcott Resolution Life & Annuity, P.O. Box 5051, Hartford, CT 06102-5051
- (22) Talcott Resolution Life Insurance, P.O. Box 5051, Hartford, CT 06102-5051

Distribution fees

During fiscal 2019, class IB shares of the funds paid the following 12b-1 fees to Putnam Retail Management:

Putnam VT Diversified Income Fund	\$345,572
Putnam VT Emerging Markets Equity Fund	\$25,383
Putnam VT Equity Income Fund	\$1,198,673
Putnam VT George Putnam Balanced Fund	\$257,855
Putnam VT Global Asset Allocation Fund	\$93,109
Putnam VT Global Equity Fund	\$56,443
Putnam VT Global Health Care Fund	\$233,399
Putnam VT Government Money Market Fund	\$108,025
Putnam VT Growth Opportunities Fund	\$519,589
Putnam VT High Yield Fund	\$127,460
Putnam VT Income Fund	\$283,624
Putnam VT International Equity Fund	\$351,062
Putnam VT International Value Fund	\$80,998
Putnam VT Mortgage Securities Fund	\$62,259
Putnam VT Multi-Asset Absolute Return Fund	\$69,041
Putnam VT Multi-Cap Core Fund	\$475,600
Putnam VT Research Fund	\$63,899
Putnam VT Small Cap Growth Fund	\$35,706
Putnam VT Small Cap Value Fund	\$203,736
Putnam VT Sustainable Future Fund	\$20,081
Putnam VT Sustainable Leaders Fund	\$379,056

Investor servicing fees

During the 2019 fiscal year, each fund incurred the following fees for investor servicing provided by Putnam Investor Services, Inc.:

Fund name	Investor servicing fees
Putnam VT Diversified Income Fund	\$142,873
Putnam VT Emerging Markets Equity Fund	\$22,871
Putnam VT Equity Income Fund	\$974,251
Putnam VT George Putnam Balanced Fund	\$115,820
Putnam VT Global Asset Allocation Fund	\$88,718
Putnam VT Global Equity Fund	\$126,959
Putnam VT Global Health Care Fund	\$94,831
Putnam VT Government Money Market Fund	\$62,171
Putnam VT Growth Opportunities Fund	\$587,967
Putnam VT High Yield Fund	\$128,769
Putnam VT Income Fund	\$171,267
Putnam VT International Equity Fund	\$153,625
Putnam VT International Value Fund	\$47,153
Putnam VT Mortgage Securities Fund	\$39,462
Putnam VT Multi-Asset Absolute Return Fund	\$19,343
Putnam VT Multi-Cap Core Fund	\$177,590
Putnam VT Research Fund	\$31,889
Putnam VT Small Cap Growth Fund	\$18,583
Putnam VT Small Cap Value Fund	\$85,735
Putnam VT Sustainable Future Fund	\$22,964
Putnam VT Sustainable Leaders Fund	\$532,631

PORTFOLIO MANAGERS

Other accounts managed

The following tables show the number and approximate assets of other investment accounts (or portions of investment accounts) that each fund's portfolio manager managed as of the fund's most recent fiscal year-end. The other accounts may include accounts for which the individuals were not designated as a portfolio manager. Unless noted, none of the other accounts pays a fee based on the account's performance.

PUTNAM VT DIVERSIFIED INCOME FUND	Other SEC-registered open-end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single-sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Portfolio managers						
D. William Kohli	14*	\$8,198,900,000	18**	\$4,328,100,000	17***	\$10,749,000,000
Michael Atkin	4	\$5,246,000,000	5	\$2,607,000,000	8***	\$1,334,100,000
Albert Chan^	14+	\$8,599,900,000	14	\$2,666,400,000	7	\$785,800,000
Robert Davis	12++	\$5,509,400,000	10	\$2,623,500,000	14***	\$1,134,500,000
Brett Kozlowski	23+++	\$12,397,700,000	22	\$6,640,100,000	15	\$3,344,800,000
Michael Salm	31#	\$31,844,700,000	36**	\$11,821,100,000	27***	\$5,061,800,000
Paul Scanlon	21#	\$10,992,400,000	27**	\$9,250,800,000	27	\$13,125,000,000

* 3 accounts, with total assets of \$2,063,700,000, pay an advisory fee based on account performance.

** 1 account, with total assets of \$60,200,000, pays an advisory fee based on account performance.

*** 1 account, with total assets of \$518,500,000, pays an advisory fee based on account performance.

^ Information for Mr. Chan, who joined the fund after the fund's fiscal year end, is as of February 29, 2020.

+ 3 accounts, with total assets of \$2,277,800,000, pay an advisory fee based on account performance.

++ 1 account, with total assets of \$275,300,000, pays an advisory fee based on account performance.

+++ 2 accounts, with total assets of \$1,486,500,000, pay an advisory fee based on account performance.

2 accounts, with total assets of \$852,500,000, pay an advisory fee based on account performance.

PUTNAM VT EMERGING MARKETS EQUITY FUND	Other SEC-registered open-end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single-sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Portfolio manager						
R. Shepherd Perkins	6*	\$7,455,800,000	2	\$316,600,000	2	\$252,700,000

* 3 accounts, with total assets of \$6,203,800,000, pay an advisory fee based on account performance.

PUTNAM VT EQUITY INCOME FUND	Other SEC-registered open-end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single-sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Portfolio managers						
Darren Jaroch	6*	\$14,896,400,000	5	\$1,912,400,000	6	\$167,000,000
Lauren DeMore	6*	\$14,896,400,000	5	\$1,912,400,000	6	\$168,000,000

* 1 account, with total assets of \$129,000,000, pays an advisory fee based on account performance.

PUTNAM VT GEORGE PUTNAM BALANCED FUND	Other SEC-registered open- end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single- sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Portfolio managers						
Kathryn Lakin	4	\$1,506,600,000	0	\$0	1	\$300,000
Paul Scanlon	21*	\$11,114,200,000	27**	\$9,250,800,000	27	\$13,125,000,000
Emily Shanks	12***	\$23,763,800,000	15	\$6,110,700,000	8	\$10,031,000,000

* 2 accounts, with total assets of \$852,500,000, pay an advisory fee based on account performance.

** 1 account, with total assets of \$60,200,000, pays an advisory fee based on account performance.

*** 1 account, with total assets of \$1,211,300,000, pays an advisory fee based on account performance.

PUTNAM VT GLOBAL ASSET ALLOCATION FUND	Other SEC-registered open- end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single- sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Portfolio managers						
Robert Schoen	31*	\$10,133,600,000	64**	\$12,307,400,000	5	\$28,700,000
James Fetch	31*	\$10,133,600,000	60**	\$12,307,300,000	1	\$100,000
Brett Goldstein	31*	\$10,133,600,000	60**	\$12,307,300,000	1	\$300,000
Jason Vaillancourt	31*	\$10,133,600,000	60**	\$12,307,300,000	1	\$500,000

* 2 accounts, with total assets of \$1,115,900,000, pay an advisory fee based on account performance.

** 2 accounts, with total assets of \$352,200,000, pay an advisory fee based on account performance.

PUTNAM VT GLOBAL EQUITY FUND	Other SEC-registered open- end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single- sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Portfolio managers						
R. Shepherd Perkins	6*	\$7,273,800,000	2	\$316,600,000	2	\$252,700,000
Jacquelyne Cavanaugh	5**	\$2,375,900,000	1	\$316,300,000	2	\$250,900,000
Walter Scully	7***	\$17,343,300,000	5	\$2,205,000,000	5	\$389,200,000

* 3 accounts, with total assets of \$6,203,800,000, pay an advisory fee based on account performance.

** 3 accounts, with total assets of \$1,928,100,000, pay an advisory fee based on account performance.

*** 1 account, with total assets of \$992,200,000, pays an advisory fee based on account performance.

PUTNAM VT GLOBAL HEALTH CARE FUND	Other SEC-registered open- end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single- sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Portfolio manager						
Michael Maguire	2	\$1,436,300,000	0	\$0	1	\$4,200,000

PUTNAM VT GROWTH OPPORTUNITIES FUND	Other SEC-registered open- end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single- sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Portfolio managers						
Richard Bodzy	1*	\$6,263,400,000	3	\$707,800,000	3	\$1,726,300,000
Greg McCullough	1*	\$6,263,400,000	3	\$707,800,000	3	\$1,726,400,000

* 1 account, with total assets of \$6,263,400,000, pays an advisory fee based on account performance.

PUTNAM VT HIGH YIELD FUND	Other SEC-registered open- end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, single- sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Portfolio managers						
Paul Scanlon	21*	\$11,016,800,000	27**	\$9,250,800,000	27	\$13,125,000,000
Norman Boucher	9	\$2,371,900,000	12	\$768,300,000	8	\$1,728,900,000
Robert Salvin	11	\$3,219,600,000	13	\$799,600,000	11	\$1,826,100,000

* 2 accounts, with total assets of \$852,500,000, pay an advisory fee based on account performance.

** 1 account, with total assets of \$60,200,000, pays an advisory fee based on account performance.

PUTNAM VT INCOME FUND	Other SEC-registered open- end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single- sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Portfolio managers						
Michael Salm	31*	\$31,856,900,000	36**	\$11,821,100,000	27***	\$5,061,800,000
Brett Kozlowski	23+	\$12,409,900,000	22	\$6,640,100,000	15	\$3,344,800,000
Emily Shanks	12++	\$23,585,800,000	15	\$6,110,700,000	8	\$10,031,000,000

* 2 accounts, with total assets of \$852,500,000, pay an advisory fee based on account performance.

** 1 account, with total assets of \$60,200,000, pays an advisory fee based on account performance.

*** 1 account, with total assets of \$518,500,000, pays an advisory fee based on account performance.

+ 2 accounts, with total assets of \$1,486,500,000, pay an advisory fee based on account performance.

++ 1 account, with total assets of \$1,211,300,000, pays an advisory fee based on account performance.

PUTNAM VT INTERNATIONAL EQUITY FUND Portfolio manager	Other SEC-registered open- end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single- sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Vivek Gandhi	1*	\$871,500,000	3	\$73,400,000	4	\$225,400,000

* 1 account, with total assets of \$844,700,000, pays an advisory fee based on account performance.

PUTNAM VT INTERNATIONAL VALUE FUND Portfolio managers	Other SEC-registered open- end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single- sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Darren Jaroch	6*	\$16,293,300,000	5	\$1,912,400,000	6	\$167,000,000
Lauren DeMore	6*	\$16,293,300,000	5	\$1,912,400,000	6	\$168,000,000

* 1 account, with total assets of \$129,000,000, pays an advisory fee based on account performance.

PUTNAM VT MORTGAGE SECURITIES FUND Portfolio managers	Other SEC-registered open- end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single- sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Michael Salm	31*	\$31,996,500,000	36**	\$11,821,100,000	27***	\$5,061,800,000
Jatin Misra	5	\$1,574,400,000	5	\$1,101,100,000	12	\$3,054,200,000
Brett Kozlowski	23+	\$12,549,400,000	22	\$6,640,100,000	15	\$3,344,800,000

* 2 accounts, with total assets of \$852,500,000, pay an advisory fee based on account performance.

** 1 account, with total assets of \$60,200,000, pays an advisory fee based on account performance.

*** 1 account, with total assets of \$518,500,000, pays an advisory fee based on account performance.

+ 2 accounts, with total assets of \$1,486,500,000, pay an advisory fee based on account performance.

PUTNAM VT MULTI- ASSET ABSOLUTE RETURN FUND Portfolio managers	Other SEC-registered open- end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single-sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Robert Schoen	31*	\$10,232,700,000	64**	\$12,307,400,000	5	\$28,700,000
James Fetch	31*	\$10,232,700,000	60**	\$12,307,300,000	1	\$100,000
Brett Goldstein	31*	\$10,232,700,000	60**	\$12,307,300,000	1	\$300,000
Jason Vaillancourt	31*	\$10,232,700,000	60**	\$12,307,300,000	1	\$500,000

- * 1 account, with total assets of \$1,089,400,000, pays an advisory fee based on account performance.
 ** 2 accounts, with total assets of \$352,200,000, pay an advisory fee based on account performance.

PUTNAM VT MULTI CAP CORE FUND Portfolio managers	Other SEC-registered open-end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single- sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Gerard Sullivan	1	\$2,675,700,000	1	\$300,000	0	\$0
Arthur Yeager	1	\$2,675,700,000	1	\$300,000	1	\$2,100,000

PUTNAM VT RESEARCH FUND Portfolio managers	Other SEC-registered open- end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single- sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Kathryn Lakin	4	\$1,576,100,000	0	\$0	1	\$300,000
Jacquelyne Cavanaugh	5*	\$2,544,100,000	1	\$316,300,000	2	\$250,900,000
Andrew O'Brien	1	\$367,100,000	0	\$0	1	\$100,000
William Rives	1	\$367,100,000	0	\$0	1	\$200,000
Walter Scully	7**	\$17,511,500,000	5	\$2,205,000,000	5	\$389,200,000

- * 3 accounts, with total assets of \$1,928,100,000, pay an advisory fee based on account performance.
 ** 1 account, with total assets of \$992,200,000, pays an advisory fee based on account performance.

PUTNAM VT SMALL CAP GROWTH FUND Portfolio manager	Other SEC-registered open- end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single-sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
William Monroe	1*	\$514,700,000	1	\$300,000	1	\$11,200,000

- * 1 account, with total assets of \$514,700,000, pays an advisory fee based on account performance.

PUTNAM VT SMALL CAP VALUE FUND	Other SEC-registered open-end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single- sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Michael Petro	1	\$226,700,000	1	\$300,000	1	\$700,000

PUTNAM VT SUSTAINABLE FUTURE FUND	Other SEC-registered open- end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single- sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Katherine Collins	3*	\$6,166,300,000	2	\$600,000	1	\$7,100,000
Stephanie Dobson	3*	\$6,166,300,000	2	\$600,000	1	\$300,000

* 1 account, with total assets of \$4,941,200,000, pays an advisory fee based on account performance.

PUTNAM VT SUSTAINABLE LEADERS FUND	Other SEC-registered open- end and closed-end funds		Other accounts that pool assets from more than one client		Other accounts (including separate accounts, managed account programs, and single- sponsor defined contribution plan offerings)	
	Number of accounts	Assets	Number of accounts	Assets	Number of accounts	Assets
Katherine Collins	3*	\$5,392,400,000	2	\$600,000	1	\$7,100,000
Stephanie Dobson	3*	\$5,392,400,000	2	\$600,000	1	\$300,000

* 1 account, with total assets of \$4,941,200,000, pays an advisory fee based on account performance.

See “Management—Portfolio Transactions—Potential conflicts of interest in managing multiple accounts” in Part II of this SAI for information on how Putnam Management addresses potential conflicts of interest resulting from an individual's management of more than one account.

Compensation of portfolio managers

For Putnam VT Emerging Markets Equity Fund, Putnam VT Equity Income Fund, Putnam VT George Putnam Balanced Fund, Putnam VT Global Equity Fund, Putnam VT Global Health Care Fund, Putnam VT Growth Opportunities Fund, Putnam VT International Equity Fund, Putnam VT International Value Fund, Putnam VT Multi-Cap Core Fund, Putnam VT Research Fund, Putnam VT Small Cap Growth Fund, Putnam VT Small Cap Value Fund, Putnam VT Sustainable

Future Fund, and Putnam VT Sustainable Leaders Fund, portfolio managers are evaluated and compensated, in part, based on their performance relative to the applicable benchmark, based on a blend of 3-year and 4-year performance, or, if shorter, the period of time that the portfolio manager has managed the product across specified products they manage. In addition to their individual performance, evaluations take into account the performance of their group and a subjective component.

For Putnam VT Diversified Income Fund, Putnam VT High Yield Fund, Putnam VT Income Fund, and Putnam VT Mortgage Securities Fund, and Putnam VT Multi-Asset Absolute Return, portfolio managers are evaluated and compensated across the group of specified products they manage, in part, based on their performance relative to peers or performance ahead of the applicable benchmark, depending on the product, based on a blend of 3-year and 4-year performance. In addition, evaluations take into account individual contributions and a subjective component.

For Putnam VT Global Asset Allocation Fund, Putnam evaluates performance based on the peer ranking of related products managed by Putnam Management with similar strategies in those products' Lipper categories over a blend of the 3-year and 4-year periods. This peer ranking is based on pre-tax performance.

For all funds, each portfolio manager is assigned an industry-competitive incentive compensation target consistent with its goal and evaluation framework. Actual incentive compensation may be higher or lower than the target, based on individual, group, and subjective performance, and may also reflect the performance of Putnam as a firm.

Incentive compensation includes a cash bonus and may also include grants of deferred cash, stock or options. In addition to incentive compensation, portfolio managers receive fixed annual salaries typically based on level of responsibility and experience.

One or more of the portfolio managers of Putnam VT Diversified Income Fund, Putnam VT High Yield Fund, Putnam VT Income Fund, and Putnam VT Mortgage Securities Fund receives a portion of the performance fee payable by several private funds managed by Putnam (the "Private Funds") in connection with their service as members of the Private Funds' portfolio management team. See "Management—Portfolio Transactions—Potential conflicts of interest in managing multiple accounts" in Part II of this SAI for information on how Putnam Management addresses potential conflicts of interest resulting from an individual's management of more than one account.

For Putnam VT Diversified Income Fund, Putnam VT High Yield Fund, Putnam VT Income Fund, and Putnam VT Mortgage Securities Fund, Putnam evaluates performance based on the peer ranking of the Putnam-sponsored retail mutual fund with the equivalent investment goal and strategy (each, a "Retail Fund") in that Retail Fund's Lipper category over a blend of the 3-year and 4-year periods or, if the Retail Fund has not yet acquired a peer ranking over such period, over the life of the Retail Fund. This peer ranking is based on pre-tax performance.

For Putnam VT Multi-Asset Absolute Return Fund, Putnam evaluates performance based on the pre-tax return of the fund's Retail Fund relative to its benchmark, ICE BofA U.S. Treasury Bill Index, over a blend of the 3-year and 4-year periods.

For each fund listed below, Putnam evaluates performance based on the fund's pre-tax return relative to the following benchmarks over the lesser of (i) a blend of the 3-year and 4-year periods and (ii) the length of time that the portfolio manager has managed the fund.

FUND	BENCHMARK
Putnam VT Emerging Markets Equity Fund	MSCI Emerging Markets Index (ND)**
Putnam VT Equity Income Fund	Russell 1000 Value Index*
Putnam VT George Putnam Balanced Fund	S&P 500 Index
Putnam VT Global Equity Fund	MSCI World Index (ND)**
Putnam VT Global Health Care Fund	MSCI World Health Care Index (ND)**
Putnam VT Growth Opportunities Fund	Russell 1000 Growth Index*
Putnam VT International Equity Fund	MSCI EAFE Index (ND)**
Putnam VT International Value Fund	MSCI EAFE Value Index (ND)**
Putnam VT Multi-Cap Core Fund	Russell 3000 Index* (starting on June 30, 2018) S&P 500 Index (prior to June 30, 2018)
Putnam VT Research Fund	S&P 500 Index
Putnam VT Small Cap Growth Fund	Russell 2000 Growth Index*
Putnam VT Small Cap Value Fund	Russell 2000 Value Index*
Putnam VT Sustainable Future Fund	Russell Midcap Growth Index* (starting on March 21, 2018) Russell 3000 Value Index* (prior to March 21, 2018)
Putnam VT Sustainable Leaders Fund	Russell 3000 Growth Index*

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** MSCI, Inc. publishes two versions of these indices reflecting the reinvestment of dividends using two different methodologies: gross dividends and net dividends. While both versions reflect reinvested dividends, they differ with

respect to the manner in which taxes associated with dividend payments are treated. In calculating the net dividends version, MSCI incorporates reinvested dividends, applying the withholding tax rate applicable to foreign non-resident institutional investors that do not benefit from double taxation treaties. Putnam Management believes that the net dividends version better reflects the returns U.S. investors might expect were they to invest directly in the component securities of each index.

***ICE BoA Indexes: ICE Data Indices, LLC ("ICE BoA"), used with permission. ICE BoA permits use of the ICE BoA indices and related data on an "as is" basis; makes no warranties regarding same; does not guarantee the suitability, quality, accuracy, timeliness, and/or completeness of the ICE BoA indices or any data included in, related to, or derived therefrom; assumes no liability in connection with the use of the foregoing; and does not sponsor, endorse, or recommend Putnam Investments, or any of its products or services.

Ownership of securities

As of December 31, 2019, none of the portfolio managers identified in the prospectuses, or their immediate family members, beneficially owned equity securities in the funds of the Trust that he or she managed. The funds are offered only to separate accounts of insurance companies. Individual investors may not invest in the funds directly, but only through purchasing variable annuity contracts or variable life insurance policies that include the funds as investment options.

OTHER RISKS

Risks of investing in Europe

Investing in Europe involves risks not typically associated with investments in the United States.

A majority of western European countries and a number of eastern European countries are members of the European Union ("EU"), an intergovernmental union aimed at developing economic and political coordination and cooperation among its member states. European countries that are members of the Economic and Monetary Union of the European Union ("EMU") are subject to restrictions on inflation rates, interest rates, deficits, and debt levels. The EMU sets out different stages and commitments for member states to follow in an effort to achieve greater coordination of economic, fiscal, and monetary policies. A member state that participates in the third (and last) stage is permitted to adopt a common currency, the euro (EMU member states that have adopted the euro are referred to as the "Eurozone"). As a condition to adopting the euro, EMU member states must also relinquish control of their monetary policies to the European Central Bank and become subject to certain monetary and fiscal controls imposed by the EMU. As economic conditions across member states may vary widely, it is possible that these controls may not adequately address the needs of all EMU member states from time to time. These controls remove EMU member states' flexibility in implementing monetary policy measures to address regional economic conditions, which may impair their ability to respond to crises. In addition, efforts by the EU and the

EMU to unify economic and monetary policies may also increase the potential for similarities in the movements of European markets and reduce the potential investment benefits of diversification within the region. Conversely, any failure of these efforts may increase volatility and uncertainty in European financial markets and negatively affect the value of the fund's investments in European issuers.

Investing in euro-denominated securities carries the risk of exposure to a currency that may not fully reflect the strengths and weaknesses of disparate European economies. Many EU economies rely heavily upon export-related businesses and the exchange rate between the euro (or other national currency for non-Eurozone members of the EU) and the U.S. dollar or other foreign currencies may positively or negatively impact corporate profits and the performance of EU investments.

European financial markets are vulnerable to volatility and losses arising from concerns about the potential exit of member countries from the EU and/or the Eurozone and, in the latter case, the reversion of those countries to their national currencies. Defaults by EMU member countries on sovereign debt, as well as any future discussions about exits from the Eurozone, may negatively affect the fund's investments in the defaulting or exiting country, in issuers, both private and governmental, with direct exposure to that country, and in European issuers generally. In addition, on June 23, 2016, voters in the United Kingdom decided in a referendum that the nation would leave the EU ("Brexit"), and the United Kingdom commenced the formal process of withdrawing from the EU on March 29, 2017. Brexit has resulted in volatility in European and global markets, and could have negative long-term impacts on financial markets in the United Kingdom and throughout Europe. There is considerable uncertainty about the potential consequences and precise timeframe for Brexit, how it will be conducted, how negotiations of trade agreements will proceed, and how the financial markets will react, and as this process unfolds markets may be further disrupted. The consequences of the United Kingdom's or another country's exit from the EU and/or Eurozone could also threaten the stability of the euro for remaining countries and could negatively affect the financial markets of other countries in the European region and beyond.

While many countries in western Europe are considered to have developed markets, many eastern European countries are less developed. Investments in eastern European countries, even if denominated in euros, may involve special risks associated with investments in emerging markets. Securities markets of emerging market economies may be less efficient and may have lower trading volume, lower liquidity, and higher volatility than more developed markets. Many eastern European economies remain particularly sensitive to social, political, and economic conditions within the region and may, in particular, given its proximity and historical ties, be adversely affected by events in Russia, including changes to the Russian economy or currency (including as the result of sanctions), or attempts by Russia to assert its influence through economic, political or military measures. Many eastern European countries are also highly dependent on exports to western Europe, making them particularly vulnerable to demand in that region. Many eastern European countries had centrally planned, socialist economies for a substantial period of time, and there can be no assurance that more recent political and economic efforts to transition to market-based economies will

be successful. As a result, investments in Eastern European countries may involve heightened risks of expropriation or nationalization. Many eastern European countries are heavily reliant on credit from western Europe, and those countries have faced significant challenges in the wake of the global economic crisis.

The impact of the global economic crisis of 2008–2009 was significant in Europe, and many European economies experienced high volatility and slow economic growth or recession as a result. A renewed or future recession in Europe or in other parts of the world could have a substantial impact on access to credit, export levels, and consumer demand in the region. European countries with less-developed economies are generally less stable, may have been more impacted by the global economic crisis, and may be more susceptible to, and recover less quickly from, the effects of any future economic crisis or recession. Some of these countries experienced large public budget deficits, high levels of public debt, and a downgrade of the credit rating of the country's sovereign debt following the 2008–2009 crisis. These developments, including related concerns about potential member country exits from the EU or Eurozone, negatively impacted the stability of the European banking system and undermined investor confidence in the region, which led to increased volatility in the European financial markets. While the Eurozone has enhanced its financial system backstop mechanism, continued effects from these developments, or similar developments in the future, may negatively impact the performance of the fund's investments in the region.

In response to the crisis, several European countries sought financial assistance from other European governments or private institutions, and any such assistance may have been conditioned on a country meeting certain objectives. A country's failure to meet the objectives upon which such assistance is conditioned could impair the country's economic recovery, which could significantly affect the value of a fund's European investments. Additionally, some European countries have imposed, and may continue to impose, strict austerity measures and comprehensive financial and labor market reforms. It is possible that these actions could negatively impact the European economies and the performance of a fund's European investments. Investor doubts over the ability of policymakers to agree on solutions to issues affecting the European financial markets may also negatively affect the fund's investments in the region.

Some European countries have experienced and may continue to experience political or social unrest as a result of high unemployment rates, austerity measures or other steps taken by national governments or the European Central Bank to address possible defaults by EMU member countries on the repayment of sovereign debt. Political or social unrest in the region may decrease tourism, lower consumer confidence, or otherwise impede financial recovery or improvement in Europe, which may in turn affect the fund's investments in the region.

Risks of investing in Asia

Investing in Asia involves risks not typically associated with investments in the United States.

Asia includes countries in various stages of economic development, from emerging market economies to the highly developed economy of Japan. Some parts of Asia may be subject to a greater degree of economic, political and social instability than is the case in the United States and Western Europe. Many countries in Asia are developing, both politically and economically, and as a result, companies in certain countries in Asia may be subject to risks like nationalization or other forms of government interference, and some countries may be heavily reliant on only a few industries or commodities.

In Japan, the economy is strongly impacted by government intervention and protectionism, as well as international trade, government support of the financial services sector and other troubled sectors, and geopolitical developments. Japan, as well as the other Asian countries, has historically been prone to natural disasters. The occurrence of a natural disaster, including subsequent recovery from a natural disaster, in the region could negatively impact the economy of the affected country or countries.

Certain developing economies in Asia are characterized by frequent currency fluctuations, devaluations, and restrictions; unstable employment rates; rapid fluctuation in, among other things, inflation and reliance on exports; and less efficient markets. Currency fluctuations or devaluations in any one country can have a significant effect on the entire region, including in more developed countries like Japan which conduct a significant portion of their trade with developing countries in Asia. Holding securities in currencies that are devalued (or in companies whose revenues are substantially in currencies that are devalued) will likely decrease the value of the fund's assets.

Risks of investing in the Asia Pacific Region

As with all emerging markets, investing, in Asia and the Pacific Basin (the "Asia Pacific Region") involves risks not typically associated with investments in the United States. The Asia Pacific Region excludes Japan, Australia and New Zealand, and includes, but is not otherwise limited to, China, Hong Kong, India, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan and Thailand

The Asia Pacific Region includes countries in various stages of economic development. Some parts of the Asia Pacific Region may be subject to a greater degree of economic, political and social instability than is the case in the United States and Western Europe. Many countries in the Asia Pacific Region are developing, both politically and economically, and as a result, companies in certain countries of the Asia Pacific Region may be subject to risks like nationalization or other forms of government interference, and some countries may be heavily reliant on only a few industries or commodities. The Asia Pacific Region has historically been prone to natural disasters. The occurrence of a natural disaster, including subsequent recovery from a natural disaster, in the Asia Pacific Region could negatively impact the economy of the affected country or countries. In addition, instability in the Asia Pacific Region may result from, among other things: (i) authoritarian governments or military involvement in political and economic

decision-making, including changes in government through extra-constitutional means; (ii) popular unrest associated with demands for improved political, economic and social conditions; (iii) internal insurgencies; (iv) hostile relations with neighboring countries; and (v) ethnic, religious and racial disaffection. These factors and the resulting instability, even in countries in which the fund is not invested, could have a negative effect on economic and securities market conditions in the Asia Pacific Region and could, in turn, adversely affect the value of the fund's holdings.

Many of the stock exchanges in the Asia Pacific Region have considerably less trading volume than those in the United States, and some of the stock exchanges in the Asia Pacific Region are in the early stages of their development, as compared to the stock exchanges in the United States. Equity securities of many companies in the Asia Pacific Region may be less liquid and more volatile than equity securities of U.S. companies of comparable size. Additionally, many companies traded on stock exchanges in the Asia Pacific Region are smaller and less seasoned than companies whose securities are traded on stock exchanges in the United States. In some countries in the Asia Pacific Region, there is no established secondary market for securities. Therefore, liquidity of securities in these countries may be generally low and transaction costs high.

Certain developing economies in the Asia Pacific Region are characterized by frequent currency fluctuations, devaluations, and restrictions; unstable employment rates; rapid fluctuation in, among other things, inflation and reliance on exports; and less efficient markets. Currency fluctuations or devaluations in any one country can have a significant effect on the entire Asia Pacific Region. Holding securities in currencies that are devalued (or in companies whose revenues are substantially in currencies that are devalued) will likely decrease the value of the fund's investments.

The economies of many countries in the Asia Pacific Region are heavily dependent on trade and exports, both internationally and within the Asia Pacific Region, and are accordingly affected by protective trade barriers and the economic conditions of their trading partners. The enactment by the United States or other principal trading partners of protectionist trade legislation, reduction of foreign investment in the local economies and general declines in the international securities markets could have a significant adverse effect upon the securities markets of the Asia Pacific Region.

SECURITIES LENDING ACTIVITIES

The following tables provide the dollar amounts of income and fees and/or compensation related to each fund's securities lending activities during the most recent fiscal year:

	Putnam VT Diversified Income Fund	Putnam VT Emerging Markets Equity Fund	Putnam VT Equity Income Fund	Putnam VT George Putnam Balanced Fund

Gross income from securities lending activities	\$0	\$19,467	\$667,940	\$36,186
Fees and/or compensation for securities lending activities and related services:				
Fees paid to securities lending agent from a revenue split	\$0	(\$845)	(\$23,402)	(\$930)
Fees paid for any cash collateral management service (including fees deducted from a pooled cash collateral reinvestment vehicle) that are not included in the revenue split	\$0	\$0	\$0	\$0
Administrative fees not included in revenue split	\$0	\$0	\$0	\$0
Indemnification fees not included in revenue split	\$0	\$0	\$0	\$0
Rebate (paid to borrower)	\$0	(\$11,014)	(\$433,907)	(\$26,883)
Other fees not included in revenue split (specify)	\$0	\$0	\$0	\$0
Aggregate fees/compensation for securities lending activities	\$0	(\$11,859)	(\$457,309)	(\$27,813)
Net income from securities lending activities	\$0	\$7,608	\$210,631	\$8,373

	Putnam VT Global Asset Allocation Fund	Putnam VT Global Equity Fund	Putnam VT Global Health Care Fund	Putnam VT Government Money Market Fund
Gross income from securities lending activities	\$19,671	\$93,534	\$143,842	\$0
Fees and/or compensation for securities lending activities and related services:				
Fees paid to securities lending agent from a revenue split	(\$363)	(\$3,199)	(\$4,847)	\$0
Fees paid for any cash collateral management service (including fees deducted from a pooled cash collateral reinvestment vehicle) that are not included in the revenue split	\$0	\$0	\$0	\$0
Administrative fees not included in revenue split	\$0	\$0	\$0	\$0
Indemnification fees not included in revenue split	\$0	\$0	\$0	\$0
Rebate (paid to borrower)	(\$16,034)	(\$61,532)	(\$95,358)	\$0
Other fees not included in revenue split (specify)	\$0	\$0	\$0	\$0
Aggregate fees/compensation for securities lending activities	(\$16,397)	(\$64,731)	(\$100,205)	\$0
Net income from securities lending activities	\$3,274	\$28,803	\$43,637	\$0

	Putnam VT Growth Opportunities Fund	Putnam VT High Yield Fund	Putnam VT Income Fund	Putnam VT International Equity Fund
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Gross income from securities lending activities	\$785,969	\$0	\$0	\$74,842
Fees and/or compensation for securities lending activities and related services:				
Fees paid to securities lending agent from a revenue split	(\$7,291)	\$0	\$0	(\$6,475)
Fees paid for any cash collateral management service (including fees deducted from a pooled cash collateral reinvestment vehicle) that are not included in the revenue split	\$0	\$0	\$0	\$0
Administrative fees not included in revenue split	\$0	\$0	\$0	\$0
Indemnification fees not included in revenue split	\$0	\$0	\$0	\$0
Rebate (paid to borrower)	(\$713,046)	\$0	\$0	(\$10,092)
Other fees not included in revenue split (specify)	\$0	\$0	\$0	\$0
Aggregate fees/compensation for securities lending activities	(\$720,337)	\$0	\$0	(\$16,567)
Net income from securities lending activities	\$65,632	\$0	\$0	\$58,275

	Putnam VT International Value Fund	Putnam VT Mortgage Securities Fund	Putnam VT Multi-Asset Absolute Return Fund	Putnam VT Multi-Cap Core Fund
Gross income from securities lending activities	\$26,598	\$0	\$23,995	\$233,146
Fees and/or compensation for securities lending activities and related services:				
Fees paid to securities lending agent from a revenue split	(\$2,432)	\$0	(\$333)	(\$4,198)
Fees paid for any cash collateral management service (including fees deducted from a pooled cash collateral reinvestment vehicle) that are not included in the revenue split	\$0	\$0	\$0	\$0
Administrative fees not included in revenue split	\$0	\$0	\$0	\$0
Indemnification fees not included in revenue split	\$0	\$0	\$0	\$0
Rebate (paid to borrower)	(\$2,275)	\$0	(\$20,656)	(\$191,145)
Other fees not included in revenue split (specify)	\$0	\$0	\$0	\$0
Aggregate fees/compensation for securities lending activities	(\$4,707)	\$0	(\$20,989)	(\$195,343)
Net income from securities lending activities	\$21,891	\$0	\$3,006	\$37,803

	Putnam VT Research Fund	Putnam VT Small Cap Growth Fund	Putnam VT Small Cap Value Fund	Putnam VT Sustainable Future Fund	Putnam VT Sustainable Leaders Fund
Gross income from securities lending activities	\$18,109	\$95,874	\$313,487	\$99,444	\$585,786
Fees and/or compensation for securities lending activities and related services:					
Fees paid to securities lending agent from a revenue split	(\$428)	(\$2,428)	(\$7,249)	(\$2,239)	(\$7,999)
Fees paid for any cash collateral management service (including fees deducted from a pooled cash collateral reinvestment vehicle) that are not included in the revenue split	\$0	\$0	\$0	\$0	\$0
Administrative fees not included in revenue split	\$0	\$0	\$0	\$0	\$0
Indemnification fees not included in revenue split	\$0	\$0	\$0	\$0	\$0
Rebate (paid to borrower)	(\$13,819)	(\$71,566)	(\$240,951)	(\$77,027)	(\$506,273)
Other fees not included in revenue split (specify)	\$0	\$0	\$0	\$0	\$0
Aggregate fees/compensation for securities lending activities	(\$14,247)	(\$73,994)	(\$248,200)	(\$79,266)	(\$514,272)
Net income from securities lending activities	\$3,862	\$21,880	\$65,287	\$20,178	\$71,514

Goldman Sachs Bank USA (d/b/a Goldman Sachs Agency Lending, or “GSAL”) acts as the securities lending agent for the Putnam funds. As securities lending agent, during the last fiscal year, GSAL located borrowers for fund securities, monitored daily the value of the loaned securities and collateral, required additional collateral as necessary, negotiated loan terms, provided certain limited recordkeeping and account servicing, monitored dividend activity and material proxy votes relating to loaned securities, and arranged for return of loaned securities to the fund at loan termination, and, as applicable, in connection with proxy votes.

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM AND FINANCIAL STATEMENTS

PricewaterhouseCoopers LLP, 101 Seaport Boulevard, Boston, Massachusetts 02210, is the Trust's independent registered public accounting firm providing audit services, tax return review and other tax consulting services and assistance and consultation in connection with the review of various Securities and Exchange Commission filings. The Report of Independent Registered Public Accounting Firm, financial highlights and financial statements included in the Annual Report of each of [Putnam VT Diversified Income Fund](#), [Putnam VT Emerging Markets Equity Fund](#), [Putnam VT Equity Income Fund](#), [Putnam VT George Putnam Balanced Fund](#), [Putnam VT Global Asset Allocation Fund](#), [Putnam VT Global Equity Fund](#), [Putnam VT Global Health Care Fund](#), [Putnam VT Government Money Market Fund](#), [Putnam VT Growth Opportunities Fund](#), [Putnam VT High Yield Fund](#), [Putnam VT Income Fund](#), [Putnam VT International Equity Fund](#), [Putnam VT International Value Fund](#), [Putnam VT Mortgage Securities Fund](#), [Putnam VT Multi-Asset Absolute Return Fund](#), [Putnam VT Multi-Cap Core Fund](#), [Putnam VT Research Fund](#), [Putnam VT Small Cap Growth Fund](#), [Putnam VT Small Cap Value Fund](#), [Putnam VT Sustainable Future Fund](#) and [Putnam VT Sustainable Leaders Fund](#) for the fiscal year ended December 31, 2019, filed electronically on February 28, 2020 (File No. 811-05346), are incorporated by reference into this SAI. The financial highlights included in the prospectuses and incorporated by reference into this SAI and incorporated in reliance upon the Report of Independent Registered Public Accounting Firm, given on their authority as experts in auditing and accounting.

PUTNAM VARIABLE TRUST

STATEMENT OF ADDITIONAL INFORMATION (“SAI”)

PART II

DISTRIBUTION PLAN

The Trust has adopted a distribution (12b-1) plan with respect to class IB shares, the principal features of which are described in the prospectus. This SAI contains additional information which may be of interest to investors.

Continuance of the plan with respect to the fund is subject to annual approval by a vote of the Trustees, including a majority of the Trustees who are not interested persons of the fund and who have no direct or indirect interest in the plan or related arrangements (the “Qualified Trustees”), cast in person at a meeting called for that purpose. All material amendments to the plan must be likewise approved by the Trustees and the Qualified Trustees. The plan may not be amended in order to increase materially the costs which the fund may bear for distribution pursuant to such plan without also being approved by a majority of the outstanding voting securities of the fund or class IB of the fund, as the case may be. The plan terminates automatically in the event of its assignment and may be terminated without penalty, at any time, by a vote of a majority of the Qualified Trustees or by a vote of a majority of the outstanding voting securities of the fund or Class IB of the fund, as the case may be.

Putnam Retail Management pays service fees to insurance companies and their affiliated dealers at the rates set forth in the prospectus. Service fees are paid quarterly (or in certain cases monthly) to the insurance company or dealer of record for that quarter.

Financial institutions receiving payments from Putnam Retail Management may be required to comply with various state and federal regulatory requirements, including among others those regulating the activities of insurance companies and securities brokers or dealers.

Except as otherwise agreed between Putnam Retail Management and a dealer, for purposes of determining the amounts payable to insurance companies or their affiliates, “average net asset value” means the product of (i) the average daily share balance in such account(s) and (ii) the average daily net asset value of the relevant class of shares over the quarter.

MISCELLANEOUS INVESTMENTS, INVESTMENT PRACTICES AND RISKS

As noted in the prospectus, in addition to the main investment strategies and the principal risks described in the prospectus, the fund may employ other investment practices and may be subject to other risks, which are described below. Because the following is a combined description of investment strategies of all of the Putnam funds, certain matters described herein may not apply to your fund. Unless a strategy or policy described below is specifically prohibited or limited by the investment restrictions discussed in the fund’s prospectus or in this SAI, or by applicable law, the fund may engage in each of the practices described below without limit. This section contains information on the investments and investment practices listed below. With respect to

funds for which Putnam Investments Limited (“PIL”) and/or The Putnam Advisory Company, LLC (“PAC”) serves as sub-investment manager (as described in the fund’s prospectus), references to Putnam Management in this section include PIL and/or PAC, as appropriate.

Temporary Defensive Strategies	Lower-rated Securities
Bank Loans, Loan Participations and Assignments	Market Risk
Borrowing and Other Forms of Leverage	Money Market Instruments
Commodities and Commodity-Related Investments	Mortgage-backed and Asset-backed Securities
Derivatives	Options on Securities
Exchange-Traded Notes	Preferred Stocks and Convertible Securities
Floating Rate and Variable Rate Demand Notes	Private Placements and Restricted Securities
Foreign Currency Transactions	Real Estate Investment Trusts (REITs)
Foreign Investments and Related Risks	Redeemable Securities
Forward Commitments and Dollar Rolls	Repurchase Agreements
Futures Contracts and Related Options	Securities Loans
Hybrid Instruments	Securities of Other Investment Companies
Illiquid Investments	Short Sales
Inflation-Protected Securities	Short-Term Trading
Initial Public Offerings (IPOs)	Special Purpose Acquisition Companies
Interfund Borrowing and Lending	Structured Investments
Inverse Floaters	Swap Agreements
Legal and Regulatory Risk Relating to Investment Strategy	Warrants
London Interbank Offered Rate (LIBOR)	Zero-coupon and Payment-in-kind Bonds

Temporary Defensive Strategies

In response to adverse market, economic, political or other conditions, the fund may take temporary defensive positions that are inconsistent with its principal investment strategies. However, a fund may choose not to use these temporary defensive strategies for a variety of reasons, even in very volatile market conditions. In implementing temporary defensive strategies, the fund may invest primarily in, among other things, debt securities, preferred stocks, U.S. government and agency obligations, cash or money market instruments (including, to the extent permitted by law or applicable exemptive relief, money market funds), or any other securities Putnam Management considers consistent with such defensive strategies. When the fund takes temporary defensive positions, the fund may miss out on investment opportunities, and the fund may not achieve its investment objective. In addition, while temporary defensive strategies are mainly designed to limit losses, such strategies may not work as intended.

Bank Loans, Loan Participations, and Assignments

The fund may invest in bank loans. Bank loans are typically senior debt obligations of borrowers (issuers) and, as such, are considered to hold a senior position in the capital structure of the borrower. These may include loans that hold the most senior position, that hold an equal ranking with other senior debt, or loans that are, in the judgment of Putnam Management, in the category of senior debt of the borrower. This capital structure position generally gives the

holders of these loans a priority claim on some or all of the borrower's assets in the event of a default. Many loans are either partially or fully secured by the assets of the borrower, and most impose restrictive covenants which must be met by the borrower. Loans are typically made by a syndicate of banks, represented by an agent bank which has negotiated and structured the loan and which is responsible generally for collecting interest, principal, and other amounts from the borrower on its own behalf and on behalf of the other lending institutions in the syndicate, and for enforcing its and their other rights against the borrower. Each of the lending institutions, including the agent bank, lends to the borrower a portion of the total amount of the loan, and retains the corresponding interest in the loan.

By purchasing a loan, the fund acquires some or all of the interest of a bank or other lending institution in a loan to a particular borrower. The fund may acquire a loan interest directly by acting as a member of the original lending syndicate. The fund may also invest in a loan in other ways, including through novations, assignments and participating interests. In a novation, the fund assumes all of the rights of a lending institution in a loan, including the right to receive payments of principal and interest and other amounts directly from the borrower and to enforce its rights as a lender directly against the borrower. The fund assumes the position of a co-lender with other syndicate members. In an assignment, the fund purchases a portion of a lender's interest in a loan. In this case, the fund may be required generally to rely upon the assigning bank to demand payment and enforce its rights against the borrower, but would otherwise be entitled to all of such bank's rights in the loan. The fund may also purchase a participating interest in a portion of the rights of a lending institution in a loan. Participation interests typically result in a contractual relationship only with the lending institution, not with the borrower. In such case, the fund will be entitled to receive payments of principal, interest and premium, if any, but will not generally be entitled to enforce its rights directly against the agent bank or the borrower, and must rely for that purpose on the lending institution. In addition, with a participation interest, the fund generally will have no rights of set-off against the borrower, and the fund may not directly benefit from the collateral supporting the loan in which it has purchased the participation.

The fund's ability to receive payments of principal and interest and other amounts in connection with loan interests held by it will depend primarily on the financial condition of the borrower (and, in some cases, the lending institution from which it purchases the loan). Adverse changes in the creditworthiness of the borrower may affect the borrower's ability to pay principal and interest, and borrowers that are in bankruptcy or restructuring may never pay off their indebtedness, or may pay only a small fraction of the amount owed. The value of collateral, if any, securing a loan can decline, or may be insufficient to meet the borrower's obligations or difficult to liquidate. In addition, the fund's access to collateral may be limited by bankruptcy or other insolvency laws. The failure by the fund to receive scheduled interest or principal payments on a loan would adversely affect the income of the fund and would likely reduce the value of its assets, which would be reflected in a reduction in the fund's net asset value. Banks and other lending institutions generally perform a credit analysis of the borrower before originating a loan or participating in a lending syndicate. In selecting the loan interests in which the fund will invest, however, Putnam Management will not rely solely on that credit analysis, but will perform its own investment analysis of the borrowers. Putnam Management's analysis may include consideration of the borrower's financial strength and managerial experience, debt coverage, additional borrowing requirements or debt maturity schedules, changing financial

conditions, and responsiveness to changes in business conditions and interest rates. Putnam Management will generally not have access to non-public information to which other investors in syndicated loans may have access. Because loans in which the fund may invest are not generally rated by independent credit rating agencies, a decision by the fund to invest in a particular loan will depend almost exclusively on Putnam Management's, and the original lending institution's, credit analysis of the borrower. Investments in loans may be of any quality, including "distressed" loans, and will be subject to the fund's credit quality policy. The loans in which the fund may invest include those that pay fixed rates of interest and those that pay floating rates – i.e., rates that adjust periodically based on a known lending rate, such as a bank's prime rate. To the extent an applicable interest rate is based on LIBOR, the fund will be exposed to certain additional risks. See "London Interbank Offered Rate (LIBOR)" below for more information.

The fund will in many cases be required to rely upon the lending institution from which it purchases the loan interest to collect and pass on to the fund such payments and to enforce the fund's rights under the loan. This may subject the fund to greater delays, expenses, and risks than if the fund could enforce its rights directly against the borrower. For example, an insolvency, bankruptcy or reorganization of the lending institution may delay or prevent the fund from receiving principal, interest and other amounts with respect to the underlying loan. When the fund is required to rely upon a lending institution to pay to the fund principal, interest and other amounts received by it, Putnam Management will also evaluate the creditworthiness of the lending institution.

The borrower of a loan in which the fund holds an interest may, either at its own election or pursuant to terms of the loan documentation, prepay amounts of the loan from time to time. The rate of such prepayments may be affected by, among other things, general business and economic conditions, as well as the financial status of the borrower. Prepayment would cause the actual duration of a loan to be shorter than its stated maturity. There is no assurance that the fund will be able to reinvest the proceeds of any loan prepayment at the same interest rate or on the same terms as those of the original loan.

Corporate loans in which the fund may invest are generally made to finance internal growth, mergers, acquisitions, stock repurchases, leveraged buy-outs and other corporate activities. A significant portion of the corporate loan interests purchased by the fund may represent interests in loans made to finance highly leveraged corporate acquisitions, known as "leveraged buy-out" transactions, leveraged recapitalization loans and other types of acquisition financing. The highly leveraged capital structure of the borrowers in such transactions may make such loans especially vulnerable to adverse changes in economic or market conditions.

The market for bank loans may not be highly liquid. In addition, loan interests generally are subject to restrictions on transfer, and only limited opportunities may exist to sell such interests in secondary markets. As a result, the fund may be unable to sell loan interests at a time when it may otherwise be desirable to do so or may be able to sell them only at a price that is less than their fair market value. The fund may hold investments in loans for a very short period of time when opportunities to resell the investments that Putnam Management believes are attractive arise.

Certain of the loan interests acquired by the fund may involve letters of credit, revolving credit facilities, or other standby financing commitments obligating the fund to make additional loans upon demand by the borrower pursuant to the terms specified in the loan documentation. This obligation may have the effect of requiring the fund to increase its investment in a borrower at a time when it would not otherwise have done so. To the extent that the fund is committed to make additional loans under the loan documentation, it will at all times set aside on its books liquid assets in an amount sufficient to meet such commitments.

Certain of the loan interests acquired by the fund may also involve loans made in foreign (i.e., non-U.S.) currencies. The fund's investment in such interests would involve the risks of currency fluctuations described in this SAI with respect to investments in the foreign securities.

With respect to its management of investments in bank loans, Putnam Management will normally seek to avoid receiving material, non-public information ("Confidential Information") about the issuers of bank loans being considered for acquisition by the fund or held in the fund's portfolio. In many instances, borrowers may offer to furnish Confidential Information to prospective investors, and to holders, of the issuer's loans. Putnam Management's decision not to receive Confidential Information may place Putnam Management at a disadvantage relative to other investors in loans (which could have an adverse effect on the price the fund pays or receives when buying or selling loans). Also, in instances where holders of loans are asked to grant amendments, waivers or consent, Putnam Management's ability to assess their significance or desirability may be adversely affected. For these and other reasons, it is possible that Putnam Management's decision not to receive Confidential Information under normal circumstances could adversely affect the fund's investment performance.

Notwithstanding its intention generally not to receive material, non-public information with respect to its management of investments in loans, Putnam Management may from time to time come into possession of material, non-public information about the issuers of loan interests that may be held in the fund's portfolio. Possession of such information may in some instances occur despite Putnam Management's efforts to avoid such possession, but in other instances Putnam Management may choose to receive such information (for example, in connection with participation in a creditors' committee with respect to a financially distressed issuer). As, and to the extent, required by applicable law, Putnam Management's ability to trade in these loan interests for the account of the fund could potentially be limited by its possession of such information. Such limitations on Putnam Management's ability to trade could have an adverse effect on the fund by, for example, preventing the fund from selling a loan interest that is experiencing a material decline in value. In some instances, these trading restrictions could continue in effect for a substantial period of time.

In some instances, other accounts managed by Putnam Management or an affiliate may hold other securities issued by borrowers in whose loans the fund may hold an interest. These other securities may include, for example, debt securities that are subordinate to the loan interests held in the fund's portfolio, convertible debt or common or preferred equity securities. In certain circumstances, such as if the credit quality of the issuer deteriorates, the interests of holders of these other securities may conflict with the interests of the holders of the issuer's loans. In such cases, Putnam Management may owe conflicting fiduciary duties to the fund and other client

accounts. Putnam Management will endeavor to carry out its obligations to all of its clients (including the fund) to the fullest extent possible, recognizing that in some cases certain clients may achieve a lower economic return, as a result of these conflicting client interests, than if Putnam Management's client accounts collectively held only a single category of the issuer's securities.

The settlement period (the period between the execution of the trade and the delivery of cash to the purchaser) for some bank loan transactions may be significantly longer than the settlement period for other investments, and in some cases longer than seven days. Requirements to obtain the consent of the borrower and/or agent can delay or impede the fund's ability to sell bank loan interests and can adversely affect the price that can be obtained. It is possible that sale proceeds from bank loan transactions will not be available to meet redemption obligations, in which case the fund may be required to utilize other sources to meet the redemption obligations, such as cash balances or proceeds from the sale of its more liquid investments or investments with shorter settlement periods.

Some loan interests may not be considered "securities" for certain purposes under the federal securities laws, and, as a result, purchasers, such as the fund, may not be entitled to rely on the anti-fraud protections of the federal securities laws.

If legislation or federal or state regulators impose additional requirements or restrictions on the ability of financial institutions to make loans that are considered highly leveraged transactions, the availability of bank loans for investment by a fund may be adversely affected. In addition, such requirements or restrictions could reduce or eliminate sources of financing for certain borrowers. This would increase the risk of default. If legislation or federal or state regulators require financial institutions to dispose of bank loans that are considered highly leveraged transactions or subject such bank loans to increased regulatory scrutiny, financial institutions may determine to sell such bank loans. If a fund attempts to sell a bank loan at a time when a financial institution is engaging in such a sale, the price a fund could get for the bank loan may be adversely affected.

Borrowing and Other Forms of Leverage

The fund may borrow money to the extent permitted by its investment policies and restrictions and applicable law. When the fund borrows money or otherwise leverages its portfolio, the value of an investment in the fund will be more volatile and other investment risks will tend to be compounded. This is because leverage tends to exaggerate the effect of any increase or decrease in the value of the fund's holdings. In addition to borrowing money from banks, the fund may engage in certain other investment transactions that may be viewed as forms of financial leverage – for example, using dollar rolls, investing collateral from loans of portfolio securities, entering into when-issued, delayed-delivery or forward commitment transactions or using derivatives such as swaps, futures, forwards, and options. Because the fund either (1) sets aside cash (or other assets determined to be liquid by Putnam Management in accordance with procedures established by the Trustees) on its books in respect of such transactions during the period in which the transactions are open or (2) otherwise "covers" its obligations under the transactions, such as by holding offsetting investments, the fund does not consider these transactions to be

borrowings for purposes of its investment restrictions or “senior securities” for purposes of the 1940 Act. In some cases (e.g., with respect to futures and forwards that are contractually required to “cash-settle”), the fund is permitted under relevant guidance from the Securities and Exchange Commission (the “SEC”) or SEC staff to set aside assets with respect to an investment transaction in the amount of its net (marked-to-market) obligations thereunder, rather than the full notional amount of the transaction. By setting aside assets equal only to its net obligations, the fund will have the ability to employ leverage to a greater extent than if it set aside assets equal to the notional amount of the transaction, which may increase the risk associated with such investments.

Each Putnam fund (other than Putnam RetirementReady® Funds, Putnam RetirementReady Maturity Fund, Putnam Retirement Advantage Funds, Putnam Retirement Advantage Maturity Fund and Putnam Short-Term Investment Fund) participates in a syndicated committed line of credit provided by State Street Bank and Trust Company and Northern Trust Company and an uncommitted line of credit provided by State Street Bank and Trust Company. These lines of credit are intended to provide a temporary source of cash in extraordinary or emergency circumstances, such as unexpected shareholder redemption requests. The fund may pay a commitment or other fee to maintain a line of credit, in addition to the stated interest rate. A participating fund in the syndicated committed line of credit that invests more than 10% of its assets in other pooled investment vehicles (other than money market funds) (a “fund-of-funds”) will be required to maintain a 400% asset coverage ratio.

Commodities and Commodity-Related Investments

Some funds may gain exposure to commodity markets by investing in physical commodities or commodity-related instruments directly or indirectly. Such instruments include, but are not limited to, futures contracts, swaps, options, forward contracts, and structured notes and equities, debt securities, convertible securities, and warrants of issuers in commodity-related industries.

Commodity prices can be extremely volatile and may be directly or indirectly affected by many factors, including changes in overall market movements, real or perceived inflationary trends, commodity index volatility, changes in interest rates or currency exchange rates, population growth and changing demographics, and factors affecting a particular industry or commodity, such as drought, floods, or other weather conditions or natural disasters, livestock disease, trade embargoes, economic sanctions, competition from substitute products, transportation bottlenecks or shortages, fluctuations in supply and demand, tariffs, and international regulatory, political, and economic developments (e.g., regime changes and changes in economic activity levels). In addition, some commodities are subject to limited pricing flexibility because of supply and demand factors, and others are subject to broad price fluctuations as a result of the volatility of prices for certain raw materials and the instability of supplies of other materials.

Actions of and changes in governments, and political and economic instability, in commodity-producing and -exporting countries may affect the production and marketing of commodities. In addition, commodity-related industries throughout the world are subject to greater political, environmental, and other governmental regulation than many other industries. Changes in government policies and the need for regulatory approvals

may adversely affect the products and services of companies in the commodities industries. For example, the exploration, development, and distribution of coal, oil, and gas in the United States are subject to significant federal and state regulation, which may affect rates of return on coal, oil, and gas and the kinds of services that the federal and state governments may offer to companies in those industries. In addition, compliance with environmental and other safety regulations has caused many companies in commodity-related industries to incur production delays and significant costs. Government regulation also may impede the development of new technologies. The effect of future regulations affecting commodity-related industries cannot be predicted.

The value of commodity-related derivatives fluctuates based on changes in the values of the underlying commodity, commodity index, futures contract, or other economic variable to which they are related. Additionally, economic leverage will increase the volatility of these instruments as they may increase or decrease in value more quickly than the underlying commodity or other relevant economic variable. See “Derivatives,” “Forward Commitments and Dollar Rolls,” “Futures Contracts and Related Options,” “Hybrid Instruments,” “Short Sales,” “Structured Investments,” “Swap Agreements” and “Warrants” herein for more information on the fund’s investments in derivatives, including commodity-related derivatives such as swap agreements, commodity futures contracts, and options on commodity futures contracts.

In order for a fund to qualify as a regulated investment company under Subchapter M of the Internal Revenue Code of 1986, as amended (the “Code”) the fund must derive at least 90 percent of its gross income each taxable year from certain sources of “qualifying income” specified in the Code.

Derivatives

Certain of the instruments in which the fund may invest, such as futures contracts, certain foreign currency transactions, options, warrants, hybrid instruments, forward contracts, swap agreements and structured investments, are considered to be “derivatives.” Derivatives are financial instruments whose value depends upon, or is derived from, the value or other attributes of one or more underlying investments, pools of investments, indexes or currencies. Investments in derivatives may be applied toward meeting a requirement to invest in a particular kind of investment if the derivatives have economic characteristics similar to that investment.

The value of derivatives may move in unexpected ways due to unanticipated market movements, the use of leverage, imperfect correlation between the derivatives instrument and the reference asset, or other factors, especially in unusual market conditions, and may result in increased volatility. Derivatives may be difficult to value and may increase the fund’s transactions costs. The successful use of derivatives depends on the ability to manage these sophisticated instruments. There is no assurance that the fund’s use of derivative instruments will enable the fund to achieve its investment objective or that Putnam Management will be able to predict correctly the direction of securities prices, interest rates, currency exchange rates and other economic factors.

The fund’s use of derivatives may cause the fund to recognize higher amounts of short-term capital gains, which are generally taxed to individual shareholders at ordinary income tax rates, and higher amounts of ordinary income, and more generally may affect the timing, character and amount of a fund’s distributions to shareholders. The fund’s use of commodity-linked derivatives can be limited by the fund’s intention to qualify as a “regulated investment company” under the Code or bear adversely on the fund’s ability to so qualify, as discussed in “Taxes” below.

The fund's use of certain derivatives may in some cases involve forms of financial leverage, which means they provide the fund with investment exposure greater than the value of the fund's investment in the derivatives. The use of leverage involves risk and may increase the volatility of the fund's net asset value. See "Borrowing and Other Forms of Leverage."

In its use of derivatives, the fund may take both long positions (the values of which move in the same direction as the prices of the underlying investments, pools of investments, indexes or currencies), and short positions (the values of which move in the opposite direction from the prices of the underlying investments, pools of investments indexes or currencies). Short positions may involve greater risks than long positions, as the risk of loss may be theoretically unlimited (unlike a long position, in which the risk of loss may be limited to the amount invested). The fund may use derivatives that combine "long" and "short" positions in order to capture the difference between underlying investments, pools of investments, indexes or currencies.

Some derivatives transactions are required to be centrally cleared, and a party to a cleared derivatives transaction is subject to the credit risk of the clearing house and the clearing member through which it holds its cleared position. Credit risk of market participants with respect to derivatives that are centrally cleared is concentrated in a few clearing houses, and it is not clear how an insolvency proceeding of a clearing house would be conducted and what impact an insolvency of a clearing house would have on the financial system or on the fund's ability to exercise remedies. Also, the fund is subject to risk if it enters into a derivatives transaction that is required to be cleared, and no clearing member is willing or able to clear the transaction on the fund's behalf.

Some derivative contracts may be privately negotiated in the over-the-counter market. These contracts also involve exposure to credit risk, since contract performance depends in part on the financial condition of the counterparty, and counterparty risk, since the counterparty may be unable or unwilling to perform its obligations under the contract for reasons unrelated to its financial condition, such as operational issues, business interruptions or contract disputes. If a privately negotiated over-the-counter contract calls for payments by the fund, the fund must be prepared to make the payments when due. If a counterparty's creditworthiness declines or the counterparty is otherwise unable or unwilling to perform its obligations under the contract, the fund may not receive payments owed under the contract, or the payments may be delayed and the value of the agreements with the counterparty may decline, potentially resulting in losses to the fund.

Derivatives also are subject to the risk that the fund may be delayed or prevented from recovering margin or other amounts deposited with a clearinghouse, futures commission merchant or other counterparty. If the fund has insufficient cash, it may have to sell securities to meet daily variation margin requirements at a time when it may be disadvantageous to do so.

To the extent the fund is required to segregate or "set aside" (often referred to as "asset segregation") liquid assets or otherwise cover open positions with respect to certain derivative instruments, the fund may be required to sell portfolio instruments to meet these asset segregation requirements. There is a possibility that segregation involving a large percentage of the fund's assets could impede portfolio management or the fund's ability to meet redemption requests or other current obligations.

Other risks arise from the potential inability to terminate or sell derivatives positions. A liquid secondary market may not always exist for the fund's derivatives positions. In fact, some over-the-counter instruments

may be considered illiquid, and it may not be possible for the fund to liquidate a derivative position at an advantageous time or price, which may result in significant losses.

Legislation and regulation of derivatives in the U.S. and other countries, including asset segregation, margin, clearing, trading and reporting requirements, and leveraging and position limits, may make derivatives more costly and/or less liquid, limit the availability of certain types of derivatives, cause the Fund to change its use of derivatives, or otherwise adversely affect a Fund's use of derivatives.

Further information about these instruments and the risks involved in their use is included elsewhere in the prospectus and in this SAI.

Combined Positions

A fund may purchase and write options in combination with each other, or in combination with futures or forward contracts, options on futures contracts, indexed securities, swap agreements or other derivative instruments, to adjust the risk and return characteristics of its overall position. For example, a fund may purchase a put option and write a call option on the same underlying instrument, in order to construct a combined position whose risk and return characteristics are similar to selling a futures contract. Another possible combined position would involve writing a call option at one strike price and buying a call option at a lower price, in order to reduce the risk of the written call option in the event of a substantial price increase. Because combined options positions involve multiple trades, they result in higher transaction costs and may be more difficult to open and close out.

Exchange-Traded Notes

The fund may invest in exchange-traded notes ("ETNs"). An ETN is a type of senior, unsecured, unsubordinated debt security whose returns are linked to the performance of a particular market index or other reference assets less applicable fees and expenses. ETNs are listed on an exchange and traded in the secondary market. Investors may hold the ETN until maturity, at which time the issuer is obligated to pay a return linked to the performance of the relevant market index less applicable fees and expenses. ETNs typically do not make periodic interest payments and principal typically is not protected.

The market value of an ETN may be influenced by, among other things, time to maturity, level of supply and demand of the ETN, economic, legal, political or geographic events that affect the reference assets, volatility and lack of liquidity in the reference assets, changes in the applicable interest rates, the current performance of the market index to which the ETN is linked, and the credit rating of the ETN issuer. The market value of an ETN may differ from the performance of the applicable market index, and there may be times when an ETN trades at a premium or discount. This difference in price may be due to the fact that the supply and demand in the market for ETNs at any point in time is not always identical to the supply and demand in the market for the securities underlying the market index that the ETN seeks to track. A change in the issuer's credit rating may also impact the value of an ETN despite the underlying market index remaining unchanged.

ETNs are also subject to tax risk. No assurance can be given that the Internal Revenue Service (the "IRS") will accept, or a court will uphold, how the fund characterizes and treats ETNs for tax purposes.

An ETN that is tied to a specific market index may not be able to replicate and maintain exactly the composition and relative weighting of securities, commodities or other components in the applicable market index. ETNs also incur certain expenses not incurred by their applicable market index, and the fund would bear a proportionate share of any fees and expenses borne by the ETN in which it invests.

The fund's ability to sell its ETN holdings may be limited by the availability of a secondary market. In addition, although an ETN may be listed on an exchange, the issuer may not be required to maintain the listing, and there can be no assurance that a secondary market will exist for an ETN. Some ETNs that use leverage in an effort to amplify the returns of an underlying market index can, at times, be relatively illiquid and may therefore be difficult to purchase or sell at a fair price. Leveraged ETNs may offer the potential for greater return, but the potential for loss and speed at which losses can be realized also are greater. The extent of the fund's investment in commodity-linked ETNs, if any, is limited by tax considerations. For more information regarding the tax treatment of commodity-linked ETNs, please see "Taxes" below.

ETNs are generally similar to structured investments and hybrid instruments. For discussion of these investments and the risks generally associated with them, see "Hybrid Instruments" and "Structured Investments" in this SAI.

Floating Rate and Variable Rate Demand Notes

The fund may purchase taxable or tax-exempt floating rate and variable rate demand notes for short-term cash management or other investment purposes. Floating rate and variable rate demand notes are debt instruments that provide for periodic adjustments in the interest rate. The interest rate on these instruments may be reset daily, weekly or on some other reset period and may have a floor or ceiling on interest rate changes. The interest rate of a floating rate instrument may be based on a known lending rate, such as a bank's prime rate, and is reset whenever such rate is adjusted. The interest rate on a variable rate demand note is reset at specified intervals at a market rate. To the extent an applicable interest rate is based on LIBOR, the fund will be exposed to certain additional risks. See "London Interbank Offered Rate (LIBOR)" below for more information.

Interest rate adjustments are designed to help stabilize the instrument's price or maintain a fixed spread to a predetermined benchmark. While this feature may protect against a decline in the instrument's market price when interest rates or benchmark rates rise, it lowers the fund's income when interest rates or benchmark rates fall. The fund's income from its floating rate and variable rate investments also may increase if interest rates rise. Floating rate and variable rate obligations are less effective than fixed rate instruments at locking in a particular yield. Nevertheless, such obligations may fluctuate in value in response to interest rate changes if there is a delay between changes in market interest rates and the interest reset date for the obligation, or for other reasons.

The fund's ability to receive payments of principal and interest and other amounts in connection with loans held by it will depend primarily on the financial condition of the issuer. The failure by the fund to receive scheduled interest or principal payments on a loan would adversely affect the income of the fund and would likely reduce the value of its assets, which would be reflected in a reduction in the fund's NAV.

Floating rate and variable rate demand notes and bonds may have a stated maturity in excess of one year, but may have features that permit a holder to demand payment of principal plus accrued interest upon a specified number of days' notice. Frequently, such obligations are secured by letters of credit or other credit support arrangements provided by banks. If these obligations are not secured by letters of credit or other credit support arrangements, the fund's right to demand payment will be dependent on the ability of the issuer to pay principal and interest on demand. In addition, these obligations frequently are not rated by credit rating

agencies and may involve heightened risk of default by the issuer. The issuer of such obligations normally has a corresponding right, after a given period, to prepay in its discretion the outstanding principal of the obligation plus accrued interest upon a specific number of days notice to the holders. There is no assurance that the fund will be able to reinvest the proceeds of any prepayment at the same interest rate or on the same terms as those of the original instrument.

The absence of an active secondary market for floating rate and variable rate demand notes could make it difficult for the fund to dispose of the instruments, and the fund could suffer a loss if the issuer defaults or during periods in which the fund is not entitled to exercise its demand rights. When a reliable trading market for the floating rate and variable rate instruments held by the fund does not exist and the fund may not demand payment of the principal amount of such instruments within seven days, the instruments may be deemed illiquid and therefore subject to the fund's limitation on investments in illiquid securities.

Foreign Currency Transactions

The fund may engage in foreign currency exchange transactions, including purchasing and selling foreign currency, foreign currency options, foreign currency forward contracts and foreign currency futures contracts and related options. The fund may engage in these transactions for a variety of reasons, including to manage the exposure to foreign currencies inherent in the fund's investments, to increase its returns, and to offset some of the costs of hedging transactions. Foreign currency transactions involve costs, and, if unsuccessful, may reduce the fund's return.

Generally, the fund may engage in both "transaction hedging" and "position hedging" (the sale of forward currency with respect to portfolio security positions). The fund may also engage in foreign currency transactions for non-hedging purposes, subject to applicable law. When it engages in transaction hedging, the fund enters into foreign currency transactions with respect to specific receivables or payables, generally arising in connection with the fund's purchase or sale of portfolio securities. The fund will engage in transaction hedging when it desires to "lock in" the U.S. dollar price of a security it has agreed to purchase or sell, or the U.S. dollar equivalent of a dividend or interest payment in a foreign currency. By transaction hedging, the fund will attempt to protect itself against a possible loss resulting from an adverse change in the relationship between the U.S. dollar and the applicable foreign currency during the period between the date on which the security is purchased or sold, or on which the dividend or interest payment is earned, and the date on which such payments are made or received. The fund may also engage in position hedging, in which the fund enters into foreign currency transactions on a particular currency with respect to portfolio positions denominated or quoted in that currency. By position hedging, the fund attempts to protect against a decline in the value relative to the U.S. dollar of the currencies in which its portfolio securities are denominated or quoted (or an increase in the value of the currency in which securities the fund intends to buy are denominated or quoted). While such a transaction would generally offset both positive and negative currency fluctuations, such currency transactions would not offset changes in security values caused by other factors.

The fund may purchase or sell a foreign currency on a spot (*i.e.*, cash) basis at the prevailing spot rate in connection with the settlement of transactions in portfolio securities denominated in that foreign currency or for other hedging or non-hedging purposes. If conditions warrant, for hedging or non-hedging purposes, the fund may also enter into contracts to purchase or sell foreign currencies at a future date ("forward contracts") and purchase and sell foreign currency futures contracts. The fund may also purchase or sell exchange-listed and over-the-counter call and put options on foreign currency futures contracts and on foreign currencies.

A foreign currency futures contract is a standardized exchange-traded contract for the future delivery of a specified amount of a foreign currency at a price set at the time of the contract. Foreign currency futures contracts traded in the United States are designed by and traded on exchanges regulated by the Commodity Futures Trading Commission (the "CFTC"), such as the New York Mercantile Exchange, and have margin requirements.

A foreign currency forward contract is a negotiated agreement to exchange currency at a future time, which may be any fixed number of days from the date of the contract as agreed by the parties, at a price set at the time of the contract. The contract price may be higher or lower than the current spot rate. In the case of a cancelable forward contract, the holder has the unilateral right to cancel the contract at maturity by paying a specified fee. Forward foreign currency exchange contracts differ from foreign currency futures contracts in certain respects. For example, the maturity date of a forward contract may be any fixed number of days from the date of the contract agreed upon by the parties, rather than a predetermined date in a given month. Forward contracts may be in any amount agreed upon by the parties rather than predetermined amounts. In addition, forward contracts are traded in the interbank market conducted directly between currency traders (usually large commercial banks) and their customers, so that no intermediary is required. A forward contract generally has no deposit requirement, and no commissions are charged at any stage for trades.

At the maturity of a forward or futures contract, the fund either may accept or make delivery of the currency specified in the contract, or at or prior to maturity enter into a closing transaction involving the purchase or sale of an offsetting contract. Closing transactions with respect to forward contracts are usually effected with the currency trader who is a party to the original forward contract. Closing transactions with respect to futures contracts may be effected only on a commodities exchange or board of trade which provides a secondary market in such contracts; a clearing corporation associated with the exchange assumes responsibility for closing out such contracts.

Positions in foreign currency futures contracts may be closed out only on an exchange or board of trade that provides a secondary market in such contracts or options. Although the fund intends to purchase or sell foreign currency futures contracts only on exchanges or boards of trade where there appears to be an active secondary market, there is no assurance that a secondary market on an exchange or board of trade will exist for any particular contract or at any particular time. In such event, it may not be possible to close a futures position and, in the event of adverse price movements, the fund would continue to be required to make daily cash payments of variation margin on its futures positions.

The precise matching of the amounts of foreign currency exchange transactions and the value of the portfolio securities involved will not generally be possible since the future value of such securities in foreign currencies will change as a consequence of market movements in the value of those securities between the dates the currency exchange transactions are entered into and the dates they mature. It is also impossible to forecast with precision the market value of portfolio securities at the expiration or maturity of a forward or futures contract. Accordingly, it may be necessary for the fund to purchase additional foreign currency on the spot market (and bear the expense of such purchase) if the market value of the security or securities being hedged is less than the amount of foreign currency the fund is obligated to deliver and a decision is made to sell the security or securities and make delivery of the foreign currency. Conversely, it may be necessary to sell on the spot market some of the foreign currency received upon the sale of the portfolio security or securities if the market value of such security or securities exceeds the amount of foreign currency the fund is obligated to deliver.

As noted above, the fund may purchase or sell exchange-listed and over-the-counter call and put options on foreign currency futures contracts and on foreign currencies. A put option on a futures contract gives the fund the right to assume a short position in the futures contract until the expiration of the option. A put option on a currency gives the fund the right to sell the currency at an exercise price until the expiration of the option. A call option on a futures contract gives the fund the right to assume a long position in the futures contract until the expiration of the option. A call option on a currency gives the fund the right to purchase the currency at the exercise price until the expiration of the option.

Options on foreign currencies operate similarly to options on securities, and are traded primarily in the over-the-counter market, although options on foreign currencies are also listed on several exchanges. Options are traded not only on the currencies of individual nations, but also on the euro, the joint currency of most countries in the European Union.

The fund will only purchase or write foreign currency options when Putnam Management believes that a liquid secondary market exists for such options. There can be no assurance that a liquid secondary market will exist for a particular option at any specific time. Options on foreign currencies may be affected by all of those factors which influence foreign exchange rates and investments generally.

The fund's currency hedging transactions may call for the delivery of one foreign currency in exchange for another foreign currency and may at times not involve currencies in which its portfolio securities are then denominated. Putnam Management will engage in such "cross hedging" activities when it believes that such transactions provide significant hedging opportunities for the fund. Cross hedging transactions by the fund involve the risk of imperfect correlation between changes in the values of the currencies to which such transactions relate and changes in the value of the currency or other asset or liability which is the subject of the hedge.

Transaction and position hedging do not eliminate fluctuations in the underlying prices of the securities that the fund owns or intends to purchase or sell. They simply establish a rate of exchange which one can achieve at some future point in time. Additionally, although these techniques tend to minimize the risk of loss due to a decline in the value of the hedged currency, they involve costs to the fund and tend to limit any potential gain which might result from the increase in value of such currency.

The fund may also engage in non-hedging currency transactions. For example, Putnam Management may believe that exposure to a currency is in the fund's best interest but that securities denominated in that currency are unattractive. In this situation, the fund may purchase a currency forward contract or option in order to increase its exposure to the currency. In accordance with SEC regulations, the fund will set aside liquid assets on its books to cover forward contracts used for non-hedging purposes.

In addition, the fund may seek to increase its current return or to offset some of the costs of hedging against fluctuations in current exchange rates by writing covered call options and covered put options on foreign currencies. The fund receives a premium from writing a call or put option, which increases the fund's current return if the option expires unexercised or is closed out at a net profit. The fund may terminate an option that it has written prior to its expiration by entering into a closing purchase transaction in which it purchases an option having the same terms as the option written.

The value of any currency, including U.S. dollars and foreign currencies, may be affected by complex political and economic factors applicable to the issuing country. In addition, the exchange rates of foreign currencies (and therefore the values of foreign currency options, forward contracts and futures contracts) may be affected significantly, fixed, or supported directly or indirectly by U.S. and foreign government actions. Government intervention may increase risks involved in purchasing or selling foreign currency options, forward contracts and futures contracts, since exchange rates may not be free to fluctuate in response to other market forces. The value of a foreign currency option, forward contract or futures contract reflects the value of an exchange rate, which in turn reflects relative values of two currencies -- the U.S. dollar and the foreign currency in question. Although foreign exchange dealers do not charge a fee for currency conversion, they do realize a profit based on the difference (the "spread") between prices at which they are buying and selling various currencies. Thus, a dealer may offer to sell a foreign currency to the fund at one rate, while offering a lesser rate of exchange should the fund desire to resell that currency to the dealer. Because foreign currency transactions occurring in the interbank market involve substantially larger amounts than those that may be involved in the exercise of foreign currency options, forward contracts and futures contracts, the fund may be disadvantaged by having to deal in an odd-lot market for the underlying foreign currencies in connection with options at prices that are less favorable than for round lots. Foreign governmental restrictions or taxes could result in adverse changes in the cost of acquiring or disposing of foreign currencies.

There is no systematic reporting of last sale information for foreign currencies and there is no regulatory requirement that quotations available through dealers or other market sources be firm or revised on a timely basis. Available quotation information is generally representative of very large round-lot transactions in the interbank market and thus may not reflect exchange rates for smaller odd-lot transactions (less than \$1 million) where rates may be less favorable. The interbank market in foreign currencies is a global, around-the-clock market. To the extent that options markets are closed while the markets for the underlying currencies remain open, significant price and rate movements may take place in the underlying markets that cannot be reflected in the options markets.

Numerous regulatory changes related to foreign currency transactions are expected to occur over time and could materially and adversely affect the ability of the fund to enter into foreign currency transactions or could increase the cost of foreign currency transactions. In the future, certain foreign currency transactions may be

required to be subject to initial as well as variation margin requirements. Foreign currency transactions that are not centrally cleared are subject to the creditworthiness of the counterparty to the foreign currency transaction (usually large commercial banks), and their values may decline substantially if the counterparty's creditworthiness deteriorates. In a cleared foreign currency transaction, performance of the transaction will be effected by a central clearinghouse rather than by the original counterparty to the transaction. Foreign currency transactions that are centrally cleared will be subject to the creditworthiness of the clearing member and the clearing organization involved in the transaction.

The decision as to whether and to what extent the fund will engage in foreign currency exchange transactions will depend on a number of factors, including prevailing market conditions, the composition of the fund's portfolio and the availability of suitable transactions. There can be no assurance that suitable foreign currency transactions will be available for the fund at any time or that the fund will engage in foreign currency exchange transactions at any time or under any circumstances even if suitable transactions are available to it.

Successful use of currency management strategies will depend on Putnam Management's skill in analyzing currency values. Currency management strategies may increase the volatility of the fund's returns and could result in significant losses to the fund if currencies do not perform as Putnam Management anticipates. There is no assurance that Putnam Management's use of currency management strategies will be advantageous to the fund or that it will hedge at appropriate times.

Foreign Investments and Related Risks

Foreign securities are normally denominated and traded in foreign currencies. As a result, the value of the fund's foreign investments and the value of its shares may be affected favorably or unfavorably by changes in currency exchange rates relative to the U.S. dollar. In addition, the fund is required to compute and distribute its income in U.S. dollars. Therefore, if the exchange rate for a foreign currency declines after a fund's income has been earned and translated into U.S. dollars (but before payment), the fund could be required to liquidate portfolio securities to make such distributions. Similarly, if an exchange rate declines between the time a fund incurs expenses in U.S. dollars and the time such expenses are paid, the amount of such currency required to be converted into U.S. dollars in order to pay such expenses in U.S. dollars will be greater than the equivalent amount in any such currency of such expenses at the time they were incurred.

There may be less information publicly available about a foreign issuer than about a U.S. issuer, and foreign issuers may not be subject to accounting, auditing, custody, disclosure and financial reporting standards and practices comparable to those in the United States. In addition, there may be less (or less effective) regulation of exchanges, brokers and listed companies in some foreign countries. The securities of some foreign issuers are less liquid and at times more volatile than securities of comparable U.S. issuers. Foreign brokerage commissions, custodial expenses and other fees are also generally higher than in the United States.

Foreign settlement procedures and trade regulations may be more complex and involve certain risks (such as delay in payment or delivery of securities or in the recovery of the fund's assets held abroad) and expenses not present in the settlement of investments in U.S. markets. For example, settlement of transactions involving foreign securities or foreign currencies (see below) may occur within a foreign country, and the fund may accept or make delivery of the underlying securities or currency in conformity with any applicable U.S. or foreign restrictions or regulations, and may pay fees, taxes or charges associated with such delivery. In addition, local market holidays or other factors may extend the time for settlement of purchases and sales of the Fund's investments in securities that trade on foreign markets. Such investments may also involve the risk that an entity involved in the settlement may not meet its obligations. Extended settlement cycles or other delays in settlement may increase the fund's liquidity risk and require the fund to employ alternative methods (*e.g.*, through borrowings) to satisfy redemption requests during periods of large redemption activity in Fund shares.

In addition, foreign securities may be subject to the risk of nationalization or expropriation of assets, imposition of economic sanctions or embargoes (whether imposed by the United States or another country or

other governmental or non-governmental organization), currency exchange controls, foreign withholding or other taxes or restrictions on the repatriation of foreign currency, confiscatory taxation, political, social or financial instability and diplomatic developments which could affect the value of the fund's investments in certain foreign countries. Such actions could result in the devaluation of a country's currency or a decline in the value and liquidity of securities of issuers in that country. In some cases (including in the case of sanctions), such actions also could result in a freeze on an issuer's securities which would prevent the fund from selling securities it holds. Governments of many countries have exercised and continue to exercise substantial influence over many aspects of the private sector through the ownership or control of many companies, including some of the largest in these countries. As a result, government actions in the future could have a significant effect on economic conditions which may adversely affect prices of certain portfolio securities. There is also generally less government supervision and regulation of stock exchanges, brokers, and listed companies than in the United States. Moreover, foreign economies may differ favorably or unfavorably from the U.S. economy in such respects as growth of gross national product, rate of inflation, capital reinvestment, resource self-sufficiency and balance of payments position. Dividends or interest on, or proceeds from the sale of, foreign securities may be subject to foreign withholding or other taxes, and special U.S. tax considerations may apply.

Note on MSCI indices. Due to the potential for foreign withholding taxes, MSCI, Inc. (MSCI) publishes two versions of its indices reflecting the reinvestment of dividends using two different methodologies: gross dividends and net dividends. While both versions reflect reinvested dividends, they differ with respect to the manner in which taxes associated with dividend payments are treated. In calculating the net dividends version, MSCI incorporates reinvested dividends applying the withholding tax rate applicable to foreign non-resident institutional investors that do not benefit from double taxation treaties. Putnam Management believes that the net dividends version of MSCI indices better reflects the returns U.S. investors might expect were they to invest directly in the component securities of an MSCI index.

Many foreign countries are heavily dependent upon exports, particularly to developed countries, and, accordingly, have been and may continue to be adversely affected by trade barriers, managed adjustments in relative currency values, and other protectionist measures imposed or negotiated by the United States and other countries with which they trade. These economies also have been and may continue to be negatively impacted by economic conditions in the United States and other trading partners, which can lower the demand for goods produced in those countries.

Legal remedies available to investors in certain foreign countries may be more limited than those available with respect to investments in the United States or in other foreign countries.

The laws of some foreign countries may limit the fund's ability to invest in securities of certain issuers organized under the laws of those foreign countries. These restrictions may take the form of prior governmental approval requirements, limits on the amount or type of securities held by foreigners and limits on the types of companies in which foreigners may invest (*e.g.*, limits on investment in certain industries). Some countries also limit the investment of foreign persons to only a specific class of securities of an issuer that may have less advantageous terms or rights or preferences than securities of the issuer available for purchase by domestic parties (and such securities may be less liquid than other classes of securities of an issuer), or may directly limit foreign investors' rights (such as voting rights). Although securities subject to such restrictions may be marketable abroad, they may be less liquid than foreign securities of the same class that are not subject to such restrictions. Foreign laws may also impact the availability of derivatives or hedging techniques relating to a foreign country's government securities. In each of these situations, the funds' ability to invest significantly in desired issuers, or the terms of such investments, could be negatively impacted as a result of the relevant legal restriction. Sanctions imposed by the United States government on other countries or persons or issuers operating in such countries could restrict the fund's ability to buy affected securities or to sell any affected securities it has previously purchased, which may subject the fund to greater risk of loss in those securities. Foreign countries may have reporting requirements with respect to the ownership of securities,

and those reporting requirements may be subject to interpretation or change without prior notice to investors. No assurance can be given that the fund will satisfy applicable foreign reporting requirements at all times.

For purposes of some foreign holding limits or disclosure thresholds, all positions owned or controlled by the same person or entity, even if in different accounts, may be aggregated for purposes of determining whether the applicable limits or thresholds have been exceeded. Thus, even if the fund does not intend to exceed applicable limits, it is possible that different clients managed by Putnam Management and its affiliates (including separate affiliates owned by Power Corporation of Canada outside the Putnam Investments group) may be aggregated for this purpose. These limits may adversely affect the fund's ability to invest in the applicable security.

The risks described above, including the risks of nationalization or expropriation of assets, typically are increased in connection with investments in developing countries, also known as "emerging markets." For example, political and economic structures in these countries may be in their infancy and developing rapidly, and such countries may lack the social, political and economic stability characteristic of more developed countries. In such a dynamic environment, there can be no assurance that any or all of these capital markets will present viable investment opportunities for the fund. Certain of these countries have in the past failed to recognize private property rights and have at times nationalized and expropriated the assets of private companies. In such an event, it is possible that the fund could lose the entire value of its investments in the affected market. High rates of inflation or currency devaluations may adversely affect the economies and securities markets of such countries. In addition, the economies of certain developing or emerging market countries may be dependent on a single industry or limited group of industries, which may increase the risks described above and make those countries particularly vulnerable to global economic and market changes. Investments in emerging markets may be considered speculative.

The currencies of certain emerging market countries have experienced devaluations relative to the U.S. dollar, and future devaluations may adversely affect the value of assets denominated in such currencies. Many emerging market countries have experienced substantial, and in some periods extremely high, rates of inflation for many years, and future inflation may adversely affect the economies and securities markets of such countries. When debt and similar obligations issued by foreign issuers are denominated in a currency (*e.g.*, the U.S. dollar or the Euro) other than the local currency of the issuer, the subsequent strengthening of the non-local currency against the local currency will generally increase the burden of repayment on the issuer and may increase significantly the risk of default by the issuer.

In addition, unanticipated political or social developments may affect the value of investments in emerging markets and the availability of additional investments in these markets. The small size, limited trading volume and relative inexperience of the securities markets in these countries may make investments in securities traded in emerging markets illiquid and more volatile than investments in securities traded in more developed countries, and the fund may be required to establish special custodial or other arrangements before making investments in securities traded in emerging markets. There may be little financial or accounting information available with respect to issuers of emerging market securities, and it may be difficult as a result to assess the value or prospects of an investment in such securities. In certain countries with emerging capital markets, reporting standards vary widely. As a result, traditional investment measurements used in the United States, such as price/earnings ratios, may not be applicable.

Practices in relation to settlement of securities transactions in emerging markets involve higher risks than those in developed markets, in part because the fund may need to use brokers and counterparties that are less well capitalized, and custody and registration of assets in some countries may be unreliable. The possibility of fraud, negligence, undue influence being exerted by the issuer, or refusal to recognize ownership exists in some emerging markets, and, along with other factors, could result in ownership registration being completely lost. The fund would absorb any loss resulting from such registration problems and may have no successful claim for compensation.

American Depositary Receipts (“ADRs”) as well as other “hybrid” forms of ADRs, including European Depositary Receipts (“EDRs”) and Global Depositary Receipts (“GDRs”), are certificates evidencing ownership of shares of a foreign issuer. These certificates are issued by depository banks and generally trade on an established market in the United States or elsewhere. The underlying shares are held in trust by a custodian bank or similar financial institution in the issuer’s home country. The depository bank may not have physical custody of the underlying securities at all times and may charge fees for various services, including forwarding dividends and interest and corporate actions. ADRs are alternatives to directly purchasing the underlying foreign securities in their national markets and currencies. However, ADRs continue to be subject to many of the risks associated with investing in foreign securities.

Certain of the foregoing risks may also apply to some extent to securities of U.S. issuers that are denominated in foreign currencies or that are traded in foreign markets, or securities of U.S. issuers having significant foreign operations or other exposure to foreign markets. If the fund invests in securities issued by foreign issuers, the fund may be subject to the risks described above even if all of the fund’s investments are denominated in U.S. dollars, especially with respect to issuers whose revenues are principally earned in a foreign currency but whose debt obligations have been issued in U.S. dollars or other hard currencies.

Investing through Stock Connect. The fund may, directly or indirectly (through, for example, participation notes or other types of equity-linked notes), purchase shares in mainland China-based companies that trade on Chinese stock exchanges such as the Shanghai Stock Exchange and the Shenzhen Stock Exchange (“China A-Shares”) through the Shanghai-Hong Kong Stock Connect (“Stock Connect”), or that may be available in the future through additional stock connect programs, a mutual market access program designed to, among other things, enable foreign investment in the People’s Republic of China (“PRC”) via brokers in Hong Kong.

There are significant risks inherent in investing in China A-Shares through Stock Connect. The underdeveloped state of PRC’s investment and banking systems subjects the settlement, clearing, and registration of China A-Shares transactions to heightened risks. Stock Connect can only operate when both PRC and Hong Kong markets are open for trading and when banking services are available in both markets on the corresponding settlement days. As such, if either or both markets are closed on a U.S. trading day, the fund may not be able to dispose of its China A-Shares in a timely manner, which could adversely affect the fund’s performance. Because Stock Connect is relatively new, its effects on the market for trading China A-shares are uncertain. In addition, the trading, settlement and information technology (“IT”) systems required to operate Stock Connect are relatively new and continuing to evolve. In the event that the relevant systems do not function properly, trading through Stock Connect could be disrupted.

PRC regulations require that, in order to sell its China A-Shares, the fund must pre-deliver the China A-Shares to a broker. If the China A-Shares are not in the broker’s possession before the market opens on the day of sale, the sell order will be rejected. This requirement could also limit the fund’s ability to dispose of its China A-Shares purchased through Stock Connect in a timely manner. Additionally, Stock Connect is subject to daily quota limitations on purchases of China A Shares. Once the daily quota is reached, orders to purchase additional China A-Shares through Stock Connect will be rejected. The fund’s investment in China A-Shares may only be traded through Stock Connect and is not otherwise transferable. Stock Connect utilizes an omnibus clearing structure, and the fund’s shares will be registered in its custodian’s name on the Central Clearing and Settlement System. This may limit the ability of Putnam Management to effectively manage the fund, and may expose the fund to the credit risk of its custodian or to greater risk of expropriation. Investment in China A-Shares through Stock Connect may be available only through a single broker that is an affiliate of the fund’s custodian, which may affect the quality of execution provided by such broker. Stock Connect restrictions could also limit the ability of the fund to sell its China A-Shares in a timely manner, or to sell them at all. Further, different fees, costs and taxes are imposed on foreign investors acquiring China A-Shares acquired through Stock Connect, and these fees, costs and taxes may be higher than comparable fees, costs and taxes imposed on owners of other securities providing similar investment exposure.

Stock Connect trades are settled in Renminbi (“RMB”), the official currency of PRC, and investors must have timely access to a reliable supply of RMB in Hong Kong, which cannot be guaranteed.

Investing through Bond Connect: Chinese debt instruments trade on the China Interbank Bond Market (“CIBM”) and may be purchased through a market access program that is designed to, among other things, enable foreign investment in the PRC (“Bond Connect”). There are significant risks inherent in investing in Chinese debt instruments, similar to the risks of investing in other fixed-income securities in emerging markets. The prices of debt instruments traded on the CIBM may fluctuate significantly due to low trading volume and potential lack of liquidity. The rules to access debt instruments that trade on the CIBM through Bond Connect are relatively new and subject to change, which may adversely affect the fund’s ability to invest in these instruments and to enforce its rights as a beneficial owner of these instruments. Trading through Bond Connect is subject to a number of restrictions that may affect the fund’s investments and returns. In addition, securities offered through Bond Connect may lose their eligibility for trading through the program at any time. If Bond Connect securities lose their eligibility for trading through the program, they may be sold but can no longer be purchased through Bond Connect. There can be no assurance as to the program’s continued existence or whether future developments regarding the program may restrict or adversely affect the fund’s investments or returns.

Investments made through Bond Connect are subject to order, clearance and settlement procedures that are relatively untested in China, which could pose risks to the fund. CIBM does not support all trading strategies (such as short selling) and investments in Chinese debt instruments that trade on the CIBM are subject to the risks of suspension of trading without cause or notice, trade failure or trade rejection and default of securities depositories and counterparties. Furthermore, Chinese debt instruments purchased via Bond Connect will be held via a book entry omnibus account in the name of the Hong Kong Monetary Authority Central Money Markets Unit (“CMU”) maintained with a China-based depository (either the China Central Depository & Clearing Co. (“CDCC”) or the Shanghai Clearing House (“SCH”). The fund’s ownership interest in these Chinese debt instruments will not be reflected directly in book entry with CSDCC or SCH and will instead only be reflected on the books of the fund’s Hong Kong sub-custodian. Therefore, the fund’s ability to enforce its rights as a bondholder may depend on CMU’s ability or willingness as record-holder of the bonds to enforce the fund’s rights as a bondholder. Additionally, the omnibus manner in which Chinese debt instruments are held could expose the fund to the credit risk of the relevant securities depositories and the fund’s Hong Kong sub-custodian. While the fund holds a beneficial interest in the instruments it acquires through Bond Connect, the mechanisms that beneficial owners may use to enforce their rights are untested. In addition, courts in China have limited experience in applying the concept of beneficial ownership. Moreover, Chinese debt instruments acquired through Bond Connect generally may not be sold, purchased or otherwise transferred other than through Bond Connect in accordance with applicable rules.

The fund’s investments in Chinese debt instruments acquired through Bond Connect are generally subject to a number of regulations and restrictions, including Chinese securities regulations and listing rules, loss recovery limitations and disclosure of interest reporting obligations. The fund will not benefit from access to Hong Kong investor compensation funds, which are set up to protect against defaults of trades, when investing through Bond Connect.

Bond Connect can only operate when both China and Hong Kong markets are open for trading and when banking services are available in both markets on the corresponding settlement days. In addition, the trading, settlement and IT systems required for non-Chinese investors in Bond Connect are relatively new. In the event of systems malfunctions or extreme market conditions, trading via Bond Connect could be disrupted. The rules applicable to taxation of Chinese debt instruments acquired through Bond Connect remain subject to further clarification. Uncertainties in the Chinese tax rules governing taxation of income and gains from investments via Bond Connect could result in unexpected tax liabilities for the fund, which may negatively affect investment returns for shareholder.

Bond Connect trades are settled in RMB, and investors must have timely access to a reliable supply of RMB in Hong Kong, which cannot be guaranteed.

Forward Commitments and Dollar Rolls

The fund may enter into contracts to purchase securities for a fixed price at a future date beyond customary settlement time (“forward commitments”) if the fund sets aside on its books liquid assets in an amount sufficient to meet the purchase price, or if the fund enters into offsetting contracts for the forward sale of other securities it owns. In the case of to-be-announced (“TBA”) purchase commitments, the unit price and the estimated principal amount are established when the fund enters into a contract, with the actual principal amount being within a specified range of the estimate. Forward commitments may be considered securities in themselves, and involve a risk of loss if the value of the security to be purchased declines prior to the settlement date, which risk is in addition to the risk of decline in the value of the fund’s other assets. Where such purchases are made through dealers, the fund relies on the dealer to consummate the sale. The dealer’s failure to do so may result in the loss to the fund of an advantageous yield or price. Although the fund will generally enter into forward commitments with the intention of acquiring securities for its portfolio or for delivery pursuant to options contracts it has entered into, the fund may dispose of a commitment prior to settlement if Putnam Management deems it appropriate to do so. The fund may realize short-term profits or losses upon the sale of forward commitments.

The fund may enter into TBA sale commitments to hedge its portfolio positions, to sell securities it owns under delayed delivery arrangements, or to take a short position in mortgage-backed securities. Proceeds of TBA sale commitments are not received until the contractual settlement date. During the time a TBA sale commitment is outstanding, either equivalent deliverable securities or an offsetting TBA purchase commitment deliverable on or before the sale commitment date are held as “cover” for the transaction, or other liquid assets in an amount equal to the notional value of the TBA sale commitment are segregated. Where the fund purchases or sells an option, which is to be settled in cash, to buy or sell a TBA sale commitment, the fund will segregate cash or liquid assets in an amount equal to the current “mark-to-market” value of the option. Unsettled TBA sale commitments are valued at current market value of the underlying securities. If the TBA sale commitment is closed through the acquisition of an offsetting purchase commitment, the fund realizes a gain or loss on the commitment without regard to any unrealized gain or loss on the underlying security. If the fund delivers securities under the commitment, the fund realizes a gain or loss from the sale of the securities based upon the unit price established at the date the commitment was entered into.

The fund may enter into dollar roll transactions (generally using TBAs) in which it sells a fixed income security for delivery in the current month and simultaneously contracts to purchase similar securities (for example, same type, coupon and maturity) at an agreed upon future time. By engaging in a dollar roll transaction, the fund foregoes principal and interest paid on the security that is sold while the dollar roll is outstanding, but receives the difference between the current sales price and the forward price for the future purchase. In addition, the fund may reinvest the cash proceeds of the sale while the dollar roll is outstanding in an effort to enhance returns. The reinvestment of such proceeds may be considered a form of investment leverage and may increase the fund’s risk and volatility. If the income and capital gains from the investment of the cash from the initial sale do not exceed the income, capital appreciation and gain or loss that would have been realized on the securities sold as part of the dollar roll, the use of this technique will result in a lower return than would have been realized without the use of the dollar rolls. The fund accounts for dollar rolls as purchases and sales. Because cash (or other assets determined to be liquid by Putnam Management in accordance with procedures established by the Trustees) in the amount of the fund’s commitment under a

dollar roll is set aside on the fund's books, the fund does not consider these transactions to be borrowings for purposes of its investment restrictions.

Purchases of securities on a forward commitment basis may involve more risk than other types of purchases. The obligation to purchase securities on a specified future date involves the risk that the market value of the securities that the fund is obligated to purchase may decline below the purchase price. In addition, when entering into a forward commitment transaction, the fund will rely on the other party to consummate the transaction. In the event that the other party files for bankruptcy, becomes insolvent or defaults on its obligation, the fund may be adversely affected. For example, the other party's failure to complete the transaction may result in the loss to the fund of an advantageous yield or price.

Futures Contracts and Related Options

Subject to applicable law, the fund may invest without limit in futures contracts and related options for hedging and non-hedging purposes, such as to manage the effective duration of the fund's portfolio or as a substitute for direct investment. A futures contract sale creates an obligation by the seller to deliver the type of financial instrument called for in the contract in a specified delivery month for a stated price. A futures contract purchase creates an obligation by the purchaser to take delivery of the type of financial instrument called for in the contract in a specified delivery month at a stated price. The specific instruments delivered or taken, respectively, at settlement date are not determined until on or near that date. The determination is made in accordance with the rules of the exchange on which the futures contract sale or purchase was made. Futures contracts are traded in the United States only on commodity exchanges or boards of trade -- known as "contract markets" -- approved for such trading by the CFTC, and must be executed through a futures commission merchant or brokerage firm which is a member of the relevant contract market. Examples of futures contracts that the fund may use (which may include single-security futures) include, without limitation, U.S. Treasury security futures, index futures, corporate or municipal bond futures, U.S. Government agency futures, interest rate futures, commodities futures, futures contracts on sovereign debt, and Eurodollar futures. In addition, as described elsewhere in this SAI, the fund may use foreign currency futures.

The value of a futures contract tends to increase and decrease in tandem with the value of its underlying instrument. Therefore, purchasing futures contracts will tend to increase the fund's exposure to positive and negative price fluctuations in the underlying instrument, much as if it had purchased the underlying instrument directly. When the fund sells a futures contract, by contrast, the value of its futures position will tend to move in a direction contrary to the market for the underlying instrument. Selling futures contracts, therefore, will tend to offset both positive and negative market price changes, much as if the underlying instrument had been sold.

When the fund enters into a futures contract, the fund is required to deliver to the futures broker an amount of liquid assets known as "initial margin." The nature of initial margin in futures transactions is different from that of margin in security transactions in that futures contract margin does not involve the borrowing of funds to finance the transactions. Rather, initial margin is similar to a performance bond or good faith deposit in that it is returned to the fund upon termination of the futures contract, assuming all contractual obligations have been satisfied. Initial margin requirements are established by the exchanges on which futures contracts trade and may, from time to time, change. Futures contracts also involve brokerage costs. Subsequent payments, called "variation margin" or "maintenance margin," to and from the broker are made on a daily basis as the value of the futures contract fluctuates, a process known as "marking to the market." For example, if the fund purchases a futures contract on an underlying security and the price of that security rises, the value of the futures contract will increase and the fund will receive from the broker a variation margin payment based on

that increase in value. Conversely, if the price of the underlying security declines, the value of the futures contract will decrease and the fund will be required to make a variation margin payment to the broker based on that decrease in value. Upon the closing of a futures contract, the fund will receive or be required to pay additional cash based on a final determinations of variation margin.

Although futures contracts (other than index futures and futures based on the volatility or variance experienced by an index) by their terms call for actual delivery or acceptance of commodities or securities, in most cases the contracts are closed out before the settlement date without the making or taking of delivery. Index futures and futures based on the volatility or variance experienced by an index do not call for actual delivery or acceptance of commodities or securities, but instead require cash settlement of the futures contract on the settlement date specified in the contract. Such contracts may also be closed out before the settlement date. The fund may close some or all of its futures positions at any time prior to their expiration. Closing out a futures contract sale is effected by purchasing a futures contract for the same aggregate amount of the specific type of financial instrument or commodity with the same delivery date. If the price of the initial sale of the futures contract exceeds the price of the offsetting purchase, the seller is paid the difference and realizes a gain. Conversely, if the price of the offsetting purchase exceeds the price of the initial sale, the seller realizes a loss. If the fund is unable to enter into a closing transaction, the amount of the fund's theoretical loss is unlimited. The closing out of a futures contract purchase is effected by the purchaser's entering into a futures contract sale. If the offsetting sale price exceeds the purchase price, the purchaser realizes a gain, and if the purchase price exceeds the offsetting sale price, he realizes a loss. Such closing transactions involve additional commission costs.

A portion of any capital gains from futures contracts in which the fund invests directly will be treated for federal income tax purposes as short-term capital gains that, when distributed to taxable shareholders, will be taxable as ordinary income. The fund's investments in futures may cause the fund to recognize income without receiving cash with which to make the distributions necessary to qualify and be eligible for treatment as a regulated investment company and avoid a fund-level tax. The fund may therefore need to liquidate other investments, including when it is not advantageous to do so, to meet its distribution requirement.

The fund does not intend to purchase or sell futures or related options for other than hedging purposes, if, as a result, the sum of the initial margin deposits on the fund's existing futures and related options positions and premiums paid for outstanding options on futures contracts would exceed 5% of the fund's net assets.

Putnam Management has claimed an exclusion from the definition of the term "commodity pool operator" under the CEA pursuant to Rule 4.5 under the CEA (the "exclusion") promulgated by the CFTC. Accordingly, Putnam Management (with respect to these funds) is not subject to registration or regulation as a "commodity pool operator" under the CEA. To remain eligible for the exclusion, each of these funds will be limited in its ability to use certain financial instruments regulated under the CEA ("commodity interests"), including futures and options on futures and certain swaps transactions. In the event that a fund's investments in commodity interests are not within the thresholds set forth in the exclusion, Putnam Management may be required to register as a "commodity pool operator" and/or "commodity trading advisor" with the CFTC with respect to that fund. Putnam Management's eligibility to claim the exclusion with respect to a fund will be based upon, among other things, the level and scope of the fund's investment in commodity interests, the purposes of such investments and the manner in which the fund holds out its use of commodity interests. A fund's ability to invest in commodity interests (including, but not limited to, futures and swaps on broad-based securities indexes and interest rates) is limited by Putnam Management's intention to operate the fund in a manner that

would permit Putnam Management to continue to claim the exclusion under Rule 4.5, which may adversely affect the fund's total return. In the event the fund's investments in commodity interests require Putnam Management to register with the CFTC as a commodity pool operator with respect to a fund, the fund's expenses may increase, adversely affecting that fund's total return.

Index futures. An index futures contract is a contract to buy or sell units of an index at a specified future date at a price agreed upon when the contract is made. Entering into a contract to buy units of an index is commonly referred to as buying or purchasing a contract or holding a long position in the index. Entering into a contract to sell units of an index is commonly referred to as selling a contract or holding a short position. A unit is the current value of the index. The fund may enter into stock index futures contracts, debt index futures contracts, or other index futures contracts appropriate to its objective(s). The fund may also purchase and sell options on index futures contracts.

For example, the Standard & Poor's 500 Composite Stock Price Index ("S&P 500") is composed of 500 selected U.S. common stocks. The S&P 500 assigns relative weightings to the common stocks that comprise the index, and the value of the index fluctuates with changes in the market values of those common stocks. In the case of the S&P 500, contracts are currently to buy or sell 250 units. Thus, if the value of the S&P 500 were \$150, one contract would be worth \$37,500 (250 units x \$150). The stock index futures contract specifies that no delivery of the actual stocks making up the index will take place. Instead, settlement in cash must occur upon the termination of the contract, with the settlement being the difference between the contract price and the actual level of the stock index at the expiration of the contract. For example, if the fund enters into a futures contract to buy 250 units of the S&P 500 at a specified future date at a contract price of \$150 and the S&P 500 is at \$154 on that future date, the fund will gain \$1,000 (250 units x gain of \$4). If the fund enters into a futures contract to sell 250 units of the stock index at a specified future date at a contract price of \$150 and the S&P 500 is at \$152 on that future date, the fund will lose \$500 (250 units x loss of \$2).

Options on futures contracts. The fund may purchase and write call and put options on futures contracts it may buy or sell and enter into closing transactions with respect to such options to terminate existing positions. Options on futures contracts possess many of the same characteristics as options on securities and indices. An option on a futures contract gives the holder the right, in return for the premium paid to assume a long position (call) or short position (put) in a futures contract at a specified exercise price at any time during the period of the option (in the case of an American-style option) or on the expiration date (in the case of European-style option). After entering into a put or call option on a futures contract, the fund will be required to deposit initial margin and variation margin as described above for futures contracts.

When a call option on a futures contract is exercised, the holder acquires a long position in the futures contract and the writer is assigned the opposite short position. When a put option on a futures contract is exercised, the holder acquires a short position in the futures contract and the writer is assigned the opposite long position. When an option is exercised, the delivery of the futures position by the writer of the option to the holder of the option will be accompanied by delivery of the accumulated balance in the writer's futures margin account, which represents the amount by which the market price of the futures contract, at exercise, exceeds (in the case of a call) or is less than (in the case of a put) the exercise price of the option on the future. If an option is exercised on the last trading day prior to its expiration date, the settlement will be made entirely in cash equal to the difference between the exercise price of the option and the closing level of the underlying asset on which the future is based on the expiration date. Purchasers of options who fail to exercise their options prior to the exercise date suffer a loss of the premium paid. The holder or writer of an option on a futures contract may terminate its position by selling or purchasing an offsetting option on the same financial instrument (subject to the availability of a liquid market).

The fund may use options on futures contracts in lieu of purchasing or writing options directly on the underlying instruments or purchasing and writing the underlying futures contracts. For example, to hedge against a possible decrease in the value of its portfolio securities, the fund may purchase put options or write call options on futures contracts rather than selling futures contracts. Similarly, the fund may purchase call options or write put options on futures contracts as a substitute for the purchase of futures contracts to hedge against a possible increase in the price of securities that the fund expects to purchase. Such options generally operate in the same manner, and involve the same risks, as options purchased or written directly on the underlying investments. As an alternative to purchasing or writing call and put options on index futures, the fund may purchase and write call and put options on the underlying indices themselves. Such options would be used in a manner identical to the use of options on index futures.

Compared to the purchase or sale of futures contracts, the purchase of call or put options on futures contracts generally involves less potential risk to the fund because the maximum amount at risk is the premium paid for the options (plus transaction costs). However, there may be circumstances when the purchase of a call or put option on a futures contract would result in a loss to the fund when the purchase or sale of a futures contract would not, such as when there is no movement in the prices of the hedged investments.

The writing of an option on a futures contract involves risks similar to those relating to the sale of futures contracts (which are described below). In addition, by writing a call option, the fund becomes obligated to sell a futures contract if the option is exercised, which may have a value higher than the exercise price. Similarly, by writing a put option, the fund becomes obligated to purchase a futures contract if the option is exercised, which may have a value lower than the exercise price. The writing of an option on a futures contract generates a premium, which may partially offset an increase (in the case of a written call option) or decrease (in the case of a written put option) in the value of the underlying futures contract. However, the loss incurred by the fund in writing options on futures contracts is potentially unlimited and may exceed the amount of the premium received. The fund will also incur transaction costs in connection with the writing of options on futures contracts.

Risks of transactions in futures contracts and related options. Successful use of futures contracts and options on futures contracts by the fund is subject to Putnam Management's ability to predict movements in various factors affecting securities markets, including interest rates and market movements, and, in the case of index futures and futures based on the volatility or variance experienced by an index, Putnam Management's ability to predict the future level of the index or the future volatility or variance experienced by an index. For example, it is possible that, where the fund has sold futures contracts to hedge its portfolio against a decline in the market, the index on which the futures contracts are written may advance and the value of securities held in the fund's portfolio, which may differ from those that comprise the index, may decline. If this occurred, the fund would lose money on the futures contracts and experience a decline in value in its portfolio securities. It is also possible that, if the fund has hedged against the possibility of a decline in the market adversely affecting securities held in its portfolio and securities prices increase instead, the fund will lose part or all of the benefit of the increased value of those securities it has hedged because it will have offsetting losses in its futures positions.

The use of futures and options strategies also involves the risk of imperfect correlation among movements in the prices of the securities or other assets underlying the futures contracts and options purchased and sold by the fund, of the options and futures contracts themselves, and, in the case of hedging transactions, of the securities which are the subject of a hedge. In addition to the possibility that there may be an imperfect correlation, or no correlation at all, between movements in the futures contracts used by the fund and the portion of the portfolio being hedged, the prices of futures contracts may not correlate perfectly with movements in the underlying asset due to certain market distortions. First, all participants in the futures market are subject to margin deposit and maintenance requirements. Rather than meeting additional margin deposit requirements, investors may close futures contracts through offsetting transactions which could distort the expected relationship between the underlying asset and futures markets. Second, margin requirements in the futures market are less onerous than margin requirements in the securities market, and as a result the futures market may attract more speculators than the securities market does. Increased participation by speculators in the futures market may also cause temporary price distortions. Due to the possibility of price distortions in the futures market and also because of the imperfect correlation between movements in the underlying asset and movements in the prices of related futures, even a correct forecast of general market trends by Putnam Management may still not result in a profitable position. In addition, in the case of hedging transactions, an incorrect correlation could result in a loss on both the hedged securities in the fund and the hedging vehicle, so that the portfolio return might have been greater had hedging not been attempted.

The risk of a position in a futures contract may be very large compared to the relatively low level of margin a fund is required to deposit. In many cases, a relatively small price movement in a futures contract may result in immediate and substantial loss or gain to the fund relative to the size of a required margin deposit. In addition, if the fund has insufficient cash, it may have to sell securities to meet daily variation margin requirements at a time when it is disadvantageous to do so. The fund will typically be required to post margin with its futures commission merchant in connection with its transactions in futures contracts. In the event of an insolvency of the futures commission merchant, the fund may not be able to recover all (or any) of the margin it has posted with the futures commission merchant, or to realize the value of any increase in the price of its positions. The fund also may be delayed or prevented from recovering margin or other amounts deposited with a futures commission merchant or futures clearinghouse.

There is no assurance that higher than anticipated trading activity or other unforeseen events might not, at times, render certain market clearing facilities inadequate, and thereby result in the institution by exchanges of special procedures that may interfere with the timely execution of customer orders. For example, futures exchanges may limit the amount of fluctuation permitted in certain futures contract prices during a single trading day. The daily limit establishes the maximum amount that the price of a futures contract may vary either up or down from the previous day's settlement price at the end of the current trading session. Once the daily limit has been reached in a futures contract subject to the limit, no more trades may be made on that day at a price beyond that limit. The daily limit governs only price movements during a particular trading day and therefore does not limit potential losses because the limit may work to prevent the liquidation of unfavorable positions. Futures prices have occasionally moved to the daily limit for several consecutive trading days with little or no trading, thereby preventing prompt liquidation of positions and subjecting some holders of futures contracts to substantial losses.

To reduce or eliminate a position held by the fund, the fund may seek to close out such position. The ability to establish and close out positions will be subject to the development and maintenance of a liquid secondary market. It is not certain that this market will develop or continue to exist for a particular futures contract or option. Reasons for the absence of a liquid secondary market on an exchange include the following: (i) there

may be insufficient trading interest in certain contracts or options; (ii) restrictions may be imposed by an exchange on opening transactions or closing transactions or both; (iii) trading halts, suspensions or other restrictions may be imposed with respect to particular classes or series of contracts or options, or underlying securities; (iv) unusual or unforeseen circumstances may interrupt normal operations on an exchange; (v) the facilities of an exchange or a clearing corporation may not at all times be adequate to handle current trading volume; or (vi) one or more exchanges could, for economic or other reasons, decide or be compelled at some future date to discontinue the trading of contracts or options (or a particular class or series of contracts or options), in which event the secondary market on that exchange for such contracts or options (or in the class or series of contracts or options) would cease to exist, although outstanding contracts or options on the exchange that had been issued by a clearing corporation as a result of trades on that exchange would continue to be exercisable in accordance with their terms. If the fund were unable to liquidate a futures contract or an option on a futures contract due to the absence of a liquid secondary market, the imposition of price limits or otherwise, it could incur substantial losses. The fund would continue to be subject to market risk with respect to the position. Also, except in the case of purchased options, the fund would continue to be required to make daily variation margin payments and might be required to maintain a position being hedged by the futures contract or option or to maintain cash or securities in a segregated account.

Hybrid Instruments

Hybrid instruments are generally considered derivatives and include indexed or structured securities and combine the elements of futures contracts or options with those of debt, preferred equity, commodity or a depository instrument. A hybrid instrument may be a debt security, preferred stock, warrant, convertible security, certificate of deposit or other evidence of indebtedness on which a portion of or all interest payments, and/or the principal or stated amount payable at maturity, redemption or retirement is determined by reference to prices, changes in prices, or differences between prices, of securities, currencies, intangibles, goods, articles or commodities (collectively, “underlying assets”), or by another objective index, economic factor or other measure, including interest rates, currency exchange rates, or commodities or securities indices (collectively, “benchmarks”).

Hybrid instruments can be an efficient means of creating exposure to a particular market, or segment of a market, with the objective of enhancing total return. For example, a fund may wish to take advantage of expected declines in interest rates in several European countries but avoid the transaction costs associated with buying and currency-hedging the foreign bond positions. One solution would be to purchase a U.S. dollar-denominated hybrid instrument whose redemption price is linked to the average three-year interest rate in a designated group of countries. The redemption price formula would provide for payoffs of less than par if rates were above the specified level. Furthermore, a fund could limit the downside risk of the security by establishing a minimum redemption price so that the principal paid at maturity could not be below a predetermined minimum level if interest rates were to rise significantly. The purpose of this arrangement, known as a structured security with an embedded put option, would be to give the fund the desired European bond exposure while avoiding currency risk, limiting downside market risk, and lowering transaction costs. Of course, there is no guarantee that the strategy will be successful, and the fund could lose money if, for example, interest rates do not move as anticipated or credit problems develop with the issuer of the hybrid instrument.

The risks of investing in hybrid instruments reflect a combination of the risks of investing in securities, options, futures and currencies. An investment in a hybrid instrument may entail significant risks that are not associated with a similar investment in a traditional debt instrument that has a fixed principal amount, is denominated in U.S. dollars or pays interest either at a fixed rate or a floating rate determined by reference to a common, nationally published benchmark. The risks of a particular hybrid instrument will depend upon the terms of the instrument but may include the possibility of significant changes in the benchmark(s) or the prices of the underlying assets to which the instrument is linked. Such risks generally depend upon factors unrelated to the operations or credit quality of the issuer of the hybrid instrument, which may not be foreseen by the

purchaser, such as economic and political events, the supply and demand of the underlying assets and interest rate movements. In addition, the various benchmarks and prices for underlying assets can be highly volatile. Hybrid instruments are potentially more volatile and carry greater market risks than traditional debt instruments. Depending on the structure of the particular hybrid instrument, changes in a benchmark may be magnified by the terms of the hybrid instrument and have an even more dramatic and substantial effect upon the value of the hybrid instrument. Also, the prices of the hybrid instrument and the benchmark or underlying asset may not move in the same direction or at the same time.

Hybrid instruments may bear interest or pay preferred dividends at below market (or even relatively nominal) rates. Alternatively, hybrid instruments may bear interest at above market rates but bear an increased risk of principal loss (or gain). The latter scenario may result if “leverage” is used to structure the hybrid instrument. Leverage risk occurs when the hybrid instrument is structured so that a given change in a benchmark or underlying asset is multiplied to produce a greater value change in the hybrid instrument, thereby magnifying the risk of loss as well as the potential for gain.

If the fund attempts to use a hybrid instrument as a hedge against, or as a substitute for, a portfolio investment, the hybrid instrument may not correlate as expected with the portfolio investment, resulting in losses to the fund. While hedging strategies involving hybrid instruments can reduce the risk of loss, they can also reduce the opportunity for gain or even result in losses by offsetting favorable price movements in other fund investments.

Hybrid instruments may also carry liquidity risk since the instruments are often “customized” to meet the portfolio needs of a particular investor, and therefore, the number of investors that are willing and able to buy such instruments in the secondary market may be smaller than that for more traditional debt securities. Under certain conditions, the redemption value of such an investment could be zero. In addition, because the purchase and sale of hybrid investments could take place in an over-the-counter market without the guarantee of a central clearing organization, or in a transaction between the fund and the issuer of the hybrid instrument, the creditworthiness of the counterparty of the issuer of the hybrid instrument would be an additional risk factor the fund would have to consider and monitor, and the value of the hybrid instrument may decline substantially if the issuer’s creditworthiness deteriorates. In addition, uncertainty regarding the tax treatment of hybrid instruments may reduce demand for such instruments. Hybrid instruments also may not be subject to regulation by the CFTC, which generally regulates the trading of commodity futures by U.S. persons, the SEC, which regulates the offer and sale of securities by and to U.S. persons, or any other governmental regulatory authority.

Illiquid Investments

Each Putnam money market fund will not invest in (a) securities which are not readily marketable, (b) securities restricted as to resale (excluding securities determined by the Trustees of the fund (or the person designated by the Trustees of the fund to make such determinations) to be readily marketable), and (c) repurchase agreements maturing in more than seven days, if, as a result, more than 10% of the fund’s net assets (taken at current value) would be invested in securities described in (a), (b) and (c). Rule 22e-4 under the 1940 Act provides that mutual funds (other than money market funds) may not acquire any illiquid investment if, immediately after the acquisition, the fund would have invested more than 15% of its net assets in illiquid investments that are assets. The term “illiquid investment” for this purpose means any investment that a fund reasonably expects cannot be sold or disposed of in current market conditions in seven calendar days or less without the sale or disposition significantly changing the market value of the investment.

A fund’s illiquid investments may be considered speculative and may be difficult to sell. The sale of many of these investments may be prohibited or limited by law or contract. Illiquid investments may be difficult to value for purposes of calculating a fund’s net asset value. A fund may not be able to sell illiquid investments when Putnam Management considers it desirable to do so, or a fund may be able to sell them only at less than their value. The larger size of certain fund holdings and the lack of liquidity in securities markets may limit a

fund's ability to sell illiquid investments, or to sell them at appropriate prices, thereby negatively impacting the fund.

Inflation-Protected Securities

The fund may invest in U.S. Treasury Inflation Protected Securities ("U.S. TIPS"), which are fixed income securities issued by the U.S. Department of Treasury, the principal amounts of which are adjusted daily based upon changes in the rate of inflation or deflation. The fund may also invest in other inflation-protected securities issued by non-U.S. governments or by private issuers. Two structures are common. While the U.S. Treasury and some other issuers use a structure that accrues inflation/deflation into the principal value of the bond, many other issuers adjust the coupon accruals for inflation-related changes.

U.S. TIPS pay interest on a semi-annual basis, equal to a fixed percentage of the inflation-adjusted principal amount. The interest rate on these securities is fixed at issuance, but over the life of the security this interest may be paid on an increasing or decreasing principal value that has been adjusted for inflation. U.S. TIPS currently are issued with maturities of five, ten, or thirty years, although it is possible that securities with other maturities will be issued in the future.

Repayment of the original principal upon maturity (as adjusted for inflation) is guaranteed for U.S. TIPS, even during a period of deflation. However, because the principal amount of U.S. TIPS would be adjusted downward during a period of deflation, the fund will be subject to deflation risk with respect to its investments in these securities. In addition, the current market value of U.S. TIPS is not guaranteed, and will fluctuate. If the fund purchases U.S. TIPS in the secondary market whose principal values have been adjusted upward due to inflation since issuance, the fund may experience a loss if there is a subsequent period of deflation. The fund may also invest in other inflation-related securities which may or may not provide a guarantee of principal. If a guarantee of principal is not provided, the adjusted principal value of the security repaid at maturity may be less than the original principal amount.

In addition, inflation-indexed securities do not protect holders from increases in interest rates due to reasons other than inflation (such as changes in currency exchange rates). The periodic adjustment of U.S. TIPS is currently tied to the Consumer Price Index for Urban Consumers ("CPI-U"), which is calculated by the U.S. Department of Treasury. The CPI-U is a measurement of changes in the cost of living, made up of components such as housing, food, transportation and energy. Inflation-protected securities issued by a non-U.S. government are generally adjusted to reflect a comparable inflation index, calculated by that government. There can be no assurance that the CPI-U or any non-U.S. inflation index will accurately measure the real rate of inflation in the prices of goods and services. If interest rates rise due to reasons other than inflation (for example, due to changes in currency exchange rates), investors in these securities may not be protected to the extent that the increase is not reflected in the security's inflation measure, which could result in losses to the fund. In addition, there can be no assurance that the rate of inflation in a non-U.S. country will be correlated to the rate of inflation in the United States.

Although inflation-indexed bonds securities may protect their holders from long-term inflationary trends, short-term increases in inflation may result in a decline in value. In general, the value of inflation-protected securities is expected to fluctuate in response to changes in real interest rates, which are in turn tied to the relationship between nominal interest rates and the rate of inflation. Therefore, if inflation were to rise at a faster rate than nominal interest rates, real interest rates might decline, leading to an increase in value of inflation-protected securities. In contrast, if nominal interest rates increased at a faster rate than inflation, real interest rates might rise, leading to a decrease in value of inflation-protected securities. If inflation is lower than expected during the period the fund holds the security, the fund may earn less on the security than on a conventional bond.

Any increase in principal value is taxable in the year the increase occurs, even though holders do not receive cash representing the increase at that time. As a result, when the fund invests in inflation-protected securities, it could be required at times to liquidate other investments, including when it is not advantageous to do so, in

order to satisfy its distribution requirements as a regulated investment company and to eliminate any fund-level income tax liability under the Code.

Initial Public Offerings

The fund may purchase debt or equity securities in initial public offerings (“IPOs”). These securities, which are often issued by unseasoned companies, may be subject to many of the same risks of investing in companies with smaller market capitalizations. Securities issued in an IPO frequently are very volatile in price (and may, therefore, involve greater risk) due to factors such as market psychology prevailing at the time of the IPO, the absence of a prior public market, unseasoned trading, the small number of shares available for trading, and limited availability of information about the issuer. Because of the price volatility of IPO securities, the fund may hold securities purchased in an IPO for a very short period of time. As a result, the fund’s investments in IPOs may increase portfolio turnover, which increases brokerage and administrative costs and may result in taxable distributions to shareholders.

There can be no assurance that investments in IPOs will be available to the funds or improve a fund’s performance. At any particular time or from time to time the fund may not be able to invest in securities issued in IPOs, or invest to the extent desired because, for example, only a small portion (if any) of the securities being offered in an IPO may be made available to the fund. In addition, under certain market conditions a relatively small number of companies may issue securities in IPOs. Similarly, to the extent that the number of Putnam funds to which IPO securities are allocated increases, the number of securities issued to any one fund may decrease. The investment performance of the fund during periods when it is unable to invest significantly or at all in IPOs may be lower than during periods when the fund is able to do so. When a fund’s asset base is small, a significant portion of the fund’s performance could be attributable to investments in IPOs because such investments would have a magnified impact on the fund. As the fund increases in size, the impact of IPOs on the fund’s performance will generally decrease.

Interfund Borrowing and Lending

To satisfy redemption requests or to cover unanticipated cash shortfalls, the fund has entered into a Master Interfund Lending Agreement by and among each Putnam fund and Putnam Management (the “Interfund Lending Agreement”) under which a Putnam fund may lend or borrow money (Putnam money market funds may lend, but not borrow) for temporary purposes directly to or from another Putnam fund (an “Interfund Loan”), subject to meeting the conditions of an SEC exemptive order granted to the fund permitting such Interfund Loans. All Interfund Loans would consist only of uninvested cash reserves that the lending fund otherwise would invest in short-term repurchase agreements or other short-term instruments. At this time, Putnam Short-Term Investment Fund is the only Putnam fund expected to make its uninvested cash reserves available for Interfund Loans.

If the fund has outstanding borrowings, any Interfund Loans to the fund (a) would be at an interest rate equal to or lower than that of any outstanding bank loan, (b) would be secured at least on an equal priority basis with at least an equivalent percentage of collateral to loan value as any outstanding bank loan that requires collateral, and (c) would have a maturity no longer than any outstanding bank loan (and in any event not over seven days). In addition, if an event of default were to occur under any agreement evidencing an outstanding bank loan to the fund, the event of default would automatically (without need for action or notice by the lending fund) constitute an immediate event of default under the Interfund Lending Agreement entitling the lending fund to call the Interfund Loan (and exercise all rights with respect to any collateral, if any). Such a call would be deemed made if a lending bank exercises its right to call its loan under its agreement with the borrowing fund.

The fund may make an unsecured borrowing under the Interfund Lending Agreement if its outstanding borrowings from all sources immediately after the interfund borrowing total 10% or less of its total assets; provided, that if the fund has a secured loan outstanding from any other lender, including but not limited to another Putnam fund, the fund's Interfund Loan would be secured on at least an equal priority basis with at least an equivalent percentage of collateral to loan value as any outstanding loan secured by collateral. If (i) the fund's total outstanding borrowings immediately after an interfund borrowing would be greater than 10% of its total assets, (ii) the fund's total outstanding borrowings exceed 10% of its total assets for any reason (such as a decline in net asset value or because of shareholder redemptions), or (iii) the fund has outstanding secured Interfund Loans, the fund may borrow through the Interfund Lending Agreement on a secured basis only. All secured Interfund Loans would be secured by the pledge of segregated collateral with a market value equal to at least 102% of the outstanding principal value of the Interfund Loan. The fund may not borrow from any source if its total outstanding borrowings immediately after the borrowing would exceed the limits imposed by Section 18 of the 1940 Act or the fund's fundamental investment restrictions.

The fund may not lend to another Putnam fund under the Interfund Lending Agreement if the Interfund Loan would cause its aggregate outstanding Interfund Loans to exceed 15% of the fund's current net assets at the time of the Interfund Loan. The fund's Interfund Loans to any one fund may not exceed 5% of the lending fund's net assets. The duration of Interfund Loans would be limited to the time required to receive payment for securities sold, but in no event may the duration exceed seven days. Interfund Loans effected within seven days of each other would be treated as separate loan transactions for purposes of this condition. Each Interfund Loan may be called on one business day's notice by a lending fund and may be repaid on any day by a borrowing fund.

The limitations detailed above and the other conditions of the SEC exemptive order permitting interfund lending are designed to minimize the risks associated with interfund lending for both the lending fund and the borrowing fund. However, no borrowing or lending activity is without risk. If the fund borrows money from another fund, there is a risk that the Interfund Loan could be called on one business day's notice or not renewed, in which case the fund may have to borrow from a bank at higher rates if an Interfund Loan were not available from another fund. A delay in repayment to a lending fund could result in a lost opportunity or additional lending costs, and interfund loans are subject to the risk that the borrowing fund could be unable to repay the loan when due. In the case of a default by a borrowing fund and to the extent that the loan is collateralized, the lending fund could take possession of collateral that it is not permitted to hold and, therefore, would be required to dispose of such collateral as soon as possible, which could result in a loss to the lending fund. Because Putnam Management provides investment management services to both the lending fund and the borrowing fund, Putnam Management may have a potential conflict of interest in determining whether an Interfund Loan is appropriate for the lending fund and the borrowing fund. The funds and Putnam Management have adopted policies and procedures that are designed to manage potential conflicts of interest, but the administration of the Interfund Program may be subject to such conflicts.

Inverse Floaters

Inverse floating rate debt securities (or "inverse floaters") are debt securities structured with variable interest rates that reset in the opposite direction from the market rate of interest to which the inverse floater is indexed. An inverse floater may be considered to be leveraged to the extent that its interest rate varies by a magnitude that exceeds the magnitude of the change in the index rate of interest. As a result, inverse floaters may be more volatile and more sensitive to interest rate changes than other types of debt securities with comparable maturities. Inverse floaters may be subject to legal or contractual restrictions on resale and therefore may be less liquid than other types of securities. Certain inverse floaters may be illiquid.

Legal and Regulatory Risks Relating to Investment Strategy

The fund may be adversely affected by new (or revised) laws or regulations that may be imposed by the Internal Revenue System or Treasury Department, the CFTC, the SEC, the U.S. Federal Reserve or other banking regulators, or other governmental regulatory authorities or self-regulatory organizations that supervise the financial markets. These agencies are empowered to promulgate a variety of rules pursuant to financial reform legislation in the United States. The fund may also be adversely affected by changes in the enforcement or interpretation of existing statutes and rules by these governmental regulatory authorities or self-regulatory organizations. For example, there has been an increase in governmental, as well as self-regulatory, scrutiny of the alternative investment industry. It is impossible to predict what, if any, changes in regulations may occur, but any regulation that restricts the ability of the fund to trade in securities could have a material adverse impact on the fund's performance.

The regulatory environment for private funds is evolving, and changes in the regulation of private funds may adversely affect the value of the investments held by the fund and the ability of the fund to execute its investment strategy. In addition, the securities and futures markets are subject to comprehensive statutes, regulations and margin requirements. The CFTC, the SEC, the Federal Deposit Insurance Corporation, other regulators and self-regulatory organizations and exchanges are authorized to take extraordinary actions in the event of market emergencies. The regulation of securitization and derivatives transactions and funds that engage in such transactions is an evolving area of law and is subject to modification by government and judicial action.

In October 2016, the SEC adopted a liquidity risk management rule, Rule 22e-4 under the 1940 Act (the "Liquidity Rule") that requires each fund (other than Putnam money market funds) to establish a liquidity risk management program. The funds have implemented a liquidity risk management program, and the fund's Board of Trustees has appointed Putnam Management to administer the program. Under the liquidity risk management program, the liquidity risk of each fund is assessed, managed, and periodically reviewed and each portfolio investment held by each fund is classified as a "highly liquid investment," "moderately liquid investment," "less liquid investment" or "illiquid investment." The Liquidity Rule defines "liquidity risk" as the risk that a fund could not meet requests to redeem shares issued by the fund without significant dilution of the remaining investors' interest in the fund. The liquidity of a fund's portfolio investments is determined based on relevant market, trading and investment-specific considerations under the fund's liquidity risk management program. The impact the Liquidity Rule will have on the funds, and on the open-end fund industry in general, is not yet fully known, but the rule could impact a fund's performance and its ability to achieve its investment objective(s). Please see "Illiquid Investments" above for more information.

The U.S. government has enacted legislation that provides for new regulation of the derivatives market, including clearing, margin, reporting and registration requirements. The CFTC, SEC, and other federal regulators have been tasked with developing the rules and regulations enacting the provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act"). The European Union ("EU") and some other countries have implemented similar requirements that affect the fund when it enters into derivatives transactions with a counterparty organized in that country or otherwise subject to that country's derivatives regulations. For example, the U.S. government and the EU have adopted mandatory minimum margin requirements for bilateral derivatives. New variation margin requirements became effective in 2017 and new initial margin requirements are expected to become effective for swaps between swap dealers and many buy-side entities in 2020. Such requirements could increase the amount of margin the fund needs to provide in connection with its derivatives transactions and, therefore, make derivatives transactions more expensive. In addition, in November 2019, the SEC repropose a rule under the 1940 Act regulating the use by registered investment companies of derivatives and many related instruments. These and other new or evolving regulations could, among other things, further restrict the fund's ability to engage in, or increase the cost to the fund of, derivatives transactions (for example, by making certain types of derivatives transactions

no longer available to the fund, increasing margin or capital requirements, or otherwise limiting liquidity or increasing transaction costs), and the fund may be unable to execute its investment strategy as a result. Regulatory changes also may affect counterparty risk. Because these requirements are new and evolving (and some of the rules are not yet final), their ultimate impact on the fund and the financial system is not yet known. While the new rules and regulations and central clearing of some derivatives transactions are designed to reduce systemic risk (*i.e.*, the risk that the interdependence of large derivatives dealers could cause them to suffer liquidity, solvency or other challenges simultaneously), there is no assurance that they will achieve that result, and in the meantime, central clearing and related requirements expose the fund to new kinds of costs and risks.

The CFTC and certain futures exchanges have established limits, referred to as “position limits,” on the maximum net long or net short positions which any person may hold or control in particular options and futures contracts. The CFTC has proposed position limits for certain swaps. All positions owned or controlled by the same person or entity, even if in different accounts, may be aggregated for purposes of determining whether the applicable position limits have been exceeded. Thus, even if the fund does not intend to exceed applicable position limits, it is possible that different clients managed by Putnam Management and its affiliates may be aggregated for this purpose. Any modification of trading decisions or elimination of open positions that may be required to avoid exceeding such limits may adversely affect the profitability of the fund.

The SEC has in the past adopted interim rules requiring reporting of all short positions above a certain de minimis threshold and may adopt rules requiring monthly public disclosure in the future. In addition, other non-U.S. jurisdictions where the fund may trade have adopted reporting requirements. If the fund’s short positions or its strategy become generally known, the fund’s ability to implement its investment strategy could be adversely affected. In particular, other investors could cause a “short squeeze” in the securities held short by the fund forcing the fund to cover its positions at a loss. Such reporting requirements may also limit the fund’s ability to access management and other personnel at certain companies where the fund seeks to take a short position. In addition, if other investors engage in copycat behavior by taking positions in the same issuers as the fund, the cost of borrowing securities to sell short could increase drastically and the availability of such securities to the fund could decrease drastically. Such events could make a fund unable to execute its investment strategy. Short sales are also subject to certain SEC regulations. If the SEC were to adopt additional restrictions on short sales, they could restrict the fund’s ability to engage in short sales in certain circumstances. The SEC and regulatory authorities in other jurisdictions may adopt (and in certain cases, have adopted) bans on short sales of certain securities in response to market events. Bans on short selling may make it impossible for the fund to execute certain investment strategies and may have a material adverse effect on the fund’s ability to generate returns.

Rules implementing the credit risk retention requirements of the Dodd-Frank Act for asset-backed securities require the sponsor of certain securitization vehicles to retain, and to refrain from transferring, selling, conveying to a third party, or hedging 5% of the credit risk in assets transferred, sold, or conveyed through the issuance of such vehicle, subject to certain exceptions. These requirements may increase the costs to originators, securitizers, and, in certain cases, collateral managers of securitization vehicles in which the fund may invest, which costs could be passed along to the fund as an investor in such transactions.

Some EU-regulated institutions (banks, certain investment firms, and authorized managers of alternative investment funds) are currently restricted from investing in securitizations (including U.S.-related securitizations), unless, in summary: (i) the institution is able to demonstrate that it has undertaken certain due diligence in respect of various matters, including its investment position, the underlying assets, and (in the case of authorized managers of alternative investment funds) the sponsor and the originator of the securitization; and (ii) the originator, sponsor, or original lender of the securitization has explicitly disclosed to the institution that it will retain, on an ongoing basis, a net economic interest of not less than five percent of specified credit risk tranches or asset exposures related to the securitization. In the future, EU insurance and reinsurance undertakings and UCITS funds are expected to become subject to similar restrictions. Although the requirements do not apply to the fund directly, the costs of compliance, in the case of any securitization within

the EU risk retention rules in which the fund has invested or is seeking to invest, could be indirectly borne by the fund and the other investors in the securitization.

In December 2019, the SEC issued a proposed rule that would change the regulatory framework within which registered investment companies are permitted to invest in other registered investment companies (the “Fund of Funds Proposal”). The Fund of Funds Proposal, if adopted as proposed, could adversely impact a fund that operates as a fund of funds by, among other things, limiting the amount of shares of other registered investment companies (such as other Putnam funds or exchange-traded funds) or pooled investment vehicles that the fund is permitted to purchase, restricting the fund’s ability to redeem or vote shares of another registered investment company, and restricting the fund from making direct investments in securities alongside investments in registered investment companies. Because the Fund of Funds Proposal has not yet been adopted, its ultimate impact on the fund and the financial system is not yet known.

London Interbank Offered Rate (LIBOR)

On July 27, 2017, the United Kingdom’s Financial Conduct Authority (“FCA”), which regulates LIBOR, announced a desire to phase out the use of LIBOR by the end of 2021. LIBOR has historically been a common benchmark interest rate index used to make adjustments to variable-rate loans. It is used throughout global banking and financial industries to determine interest rates for a variety of financial instruments and borrowing arrangements. Various financial industry groups have begun planning for the transition from LIBOR, but there are obstacles to converting certain longer-term securities and transactions to a new benchmark. Transaction planning is at an early stage, and neither the effect of the transition process nor its ultimate success can yet be known. The transition process might lead to increased volatility and illiquidity in markets that currently rely on LIBOR to determine interest rates. It could also lead to a reduction in the value of some LIBOR-based investments and reduce the effectiveness of new hedges placed against existing LIBOR-based investments. While some LIBOR-based instruments may contemplate a scenario where LIBOR is no longer available by providing for an alternative rate-setting methodology, not all may have such provisions and there may be significant uncertainty regarding the effectiveness of any such alternative methodologies. Since the usefulness of LIBOR as a benchmark could deteriorate during the transition period, these effects could occur prior to the end of 2021.

Lower-rated Securities

The fund may invest in lower-rated fixed-income securities (commonly known as “junk bonds”) and may hold fixed-income securities that are downgraded to a lower rating after the time of purchase by the fund. Compared to higher-rated fixed-income securities, lower-rated securities generally offer the potential for higher investment returns but subject holders to greater credit, market and liquidity risk, including the possibility of default or bankruptcy. The lower ratings reflect a greater possibility that adverse changes in the financial condition of the issuer or in general economic conditions, or both, or an unanticipated rise in interest rates, may impair the ability of the issuer to make payments of interest and principal. The inability (or perceived inability) of issuers to make timely payment of interest and principal would likely make the values of securities held by the fund more volatile and could limit the fund’s ability to sell its securities at prices approximating the values the fund had placed on such securities. The market price of lower-rated securities also generally responds to short-term corporate and market developments to a greater extent than do the price and liquidity of higher-rated securities because such developments are perceived to have a more direct relationship to the ability of an issuer of lower-rated securities to meet its ongoing debt obligations. In addition, the market may be less liquid for lower-rated securities than for higher-rated securities. In the absence of a liquid trading market for securities held by it, the fund at times may be unable to establish the fair value of such securities.

Securities ratings are based largely on the issuer's historical financial condition and the rating agencies' analysis at the time of rating. Consequently, the rating assigned to any particular security is not necessarily a reflection of the issuer's current financial condition, which may be better or worse than the rating would indicate. In addition, the rating assigned to a security by Moody's Investors Service, Inc. or Standard & Poor's (or by any other nationally recognized securities rating agency) does not reflect an assessment of the volatility of the security's market value or the liquidity of an investment in the security. See "SECURITIES RATINGS."

Like those of other fixed-income securities, the values of lower-rated securities fluctuate in response to changes in interest rates. A decrease in interest rates will generally result in an increase in the value of the fund's fixed-income assets. Conversely, during periods of rising interest rates, the value of the fund's fixed-income assets will generally decline. The values of lower-rated securities may often be affected to a greater extent than higher-rated securities by changes in general economic conditions and business conditions affecting the issuers of such securities and their industries. Negative publicity or investor perceptions may also adversely affect the values of lower-rated securities, whether or not justified by fundamental factors. Changes by nationally recognized securities rating agencies in their ratings of any fixed-income security, changes in the ability of an issuer to make payments of interest and principal or regulation that limits the ability of certain categories of financial institutions to invest in lower-rated securities may also affect the value of these investments. Changes in the value of portfolio securities generally will not affect income derived from these securities, but will affect the fund's net asset value. The fund will not necessarily dispose of a security when its rating is reduced below its rating at the time of purchase. However, Putnam Management will monitor the investment to determine whether its retention will assist in meeting the fund's goal(s).

Lower-rated securities may contain redemption, call or prepayment provisions which permit the issuer of such securities to, at its discretion, redeem the securities. During periods of falling interest rates, issuers of these securities are likely to redeem or prepay the securities and refinance them with debt securities with a lower interest rate. To the extent an issuer is able to refinance the securities, or otherwise redeem them, the fund may have to replace the securities with a lower yielding security, which would result in a lower return.

Issuers of lower-rated fixed-income securities may be (i) in poor financial condition, (ii) experiencing poor operating results, (iii) having substantial capital needs or negative net worth, or (iv) facing special competitive or product obsolescence problems, and may include companies involved in bankruptcy or other reorganizations or liquidation proceedings. Issuers of lower-rated securities are also often highly leveraged, and their relatively high debt-to-equity ratios increase the risk that their operations may not generate sufficient cash flow to service their debt obligations, especially during an economic downturn or during sustained periods of rising interest rates. Such issuers may not have more traditional methods of financing available to them and may be unable to repay outstanding obligations at maturity by refinancing. The risk of loss due to default in payment of interest or repayment of principal by issuers of lower-rated securities is significantly greater than for issuers of higher-rated securities because such securities frequently are unsecured and subordinated to the prior payment of senior indebtedness.

At times, a substantial portion of the fund's assets may be invested in an issue of which the fund, by itself or together with other funds and accounts managed by Putnam Management or its affiliates, holds all or a major portion. Although Putnam Management generally considers such securities to be liquid because of the availability of an institutional market for such securities, it is possible that, under adverse market or economic conditions or in the event of adverse changes in the financial condition of the issuer, the fund could find it more difficult to sell these securities when Putnam Management believes it advisable to do so or may be able to sell the securities only at prices lower than if they were more widely held. Under these circumstances, it may also be more difficult to determine the fair value of such securities for purposes of computing the fund's net asset value. In order to enforce its rights in the event of a default, the fund may be required to participate in various legal proceedings or take possession of and manage assets securing the issuer's obligations on such securities. This could increase the fund's operating expenses and adversely affect the fund's net asset value. In the case of tax-exempt funds, any income derived from the fund's ownership or operation of such assets would not be tax-exempt. The ability of a holder of a tax-exempt security to enforce the terms of that security in a

bankruptcy proceeding may be more limited than would be the case with respect to securities of private issuers. In addition, the fund's intention to qualify as a "regulated investment company" under the Code may limit the extent to which the fund may exercise its rights by taking possession of such assets.

To the extent the fund invests in lower-rated securities, the achievement of the fund's goals is more dependent on Putnam Management's investment analysis than would be the case if the fund were investing in higher-rated securities

Market Risk

The value of securities in a fund's portfolio may fall or fail to rise over extended periods of time for a variety of reasons, including general economic, political or financial market conditions, investor sentiment and market perceptions (including perceptions about monetary policy, interest rates or the risk of default), government actions (including protectionist measures, intervention in the financial markets or other regulation, and changes in fiscal, monetary or tax policies), geopolitical events or changes (including natural disasters, epidemics or pandemics, terrorism and war), and factors related to a specific issuer, geography, industry or sector. In addition, the increasing popularity of passive index-based investing may have the potential to increase security price correlations and volatility. (As passive strategies generally buy or sell securities based simply on inclusion and representation in an index, securities prices will have an increasing tendency to rise or fall based on whether money is flowing into or out of passive strategies rather than based on an analysis of the prospects and valuation of individual securities. This may result in increased market volatility as more money is invested through passive strategies). These and other factors may lead to increased volatility and reduced liquidity in the fund's portfolio holdings, particularly for larger investments. During those periods, the fund may experience high levels of shareholder redemptions, and may have to sell securities at times when it would otherwise not do so, and at unfavorable price.

Legal, political, regulatory and tax changes may cause fluctuations in markets and securities prices. In the past, governmental and non-governmental issuers have defaulted on, or have been forced to restructure, their debts, and many other issuers have faced difficulties obtaining credit. Defaults or restructurings by governments or others of their debts could have substantial adverse effects on economies, financial markets, and asset valuations around the world. In addition, financial regulators, including the U.S. Federal Reserve and the European Central Bank, at times have taken steps to maintain historically low interest rates, such as by purchasing bonds. Some governmental authorities at times have taken steps to devalue their currencies substantially or have taken other steps to counter actual or anticipated market or other developments. Steps by those regulators and authorities to implement, or to curtail or taper, these activities could have substantial negative effects on financial markets. The withdrawal of support, failure of efforts in response to a financial crisis, or investor perception that these efforts are not succeeding could negatively affect financial markets generally as well as the values and liquidity of certain securities.

The fund is subject to the risk that geopolitical events will disrupt securities markets and adversely affect global economies and markets. War, terrorism, economic uncertainty, and other geopolitical events (including sanctions, tariffs, exchange controls or other cross-border trade barriers) have led, and in the future may lead, to increased short-term market volatility and may have adverse long-term effects on U.S. and world economies and markets generally. In addition, trade disputes (such as the "trade war" between the United States and China that intensified in 2018 and 2019) may affect investor and consumer confidence and may adversely impact financial markets and the broader economy, perhaps suddenly and to a significant degree. Events such as these and their impact on the fund are difficult to predict.

Likewise, natural and environmental disasters, epidemics or pandemics, and systemic market dislocations may be highly disruptive to economies and markets, and may result in significant market volatility, exchange

trading suspensions or closures, or a substantial economic downturn or recession. Those events, as well as other changes in foreign and domestic economic and political conditions, also could disrupt the operations of the fund or its service providers or adversely affect individual issuers or related groups of issuers, interest rates, credit ratings, default rates, inflation, supply chains, consumer demand, investor sentiment, and other factors affecting the value or liquidity of the fund's investments.

An outbreak of respiratory disease caused by a novel coronavirus designated as COVID-19 was first detected in China in December 2019 and subsequently spread internationally. The transmission of COVID-19 and efforts to contain its spread have resulted in, among other things, border closings and other significant travel restrictions and disruptions, significant disruptions to business operations, supply chains and customer activity, lower consumer demand for goods and services, event cancellations and restrictions, service cancellations, reductions and other changes, significant challenges in healthcare service preparation and delivery, and prolonged quarantines, as well as general concern and uncertainty. The impact of the COVID-19 outbreak could negatively affect the global economy, the economies of individual countries, and the financial performance of individual issuers, sectors, industries, asset classes, and markets in significant and unforeseen ways. In addition, actions taken by government and quasi-governmental authorities and regulators throughout the world in response to the COVID-19 outbreak, including significant fiscal and monetary policies changes, may affect the value, volatility, and liquidity of some securities or other assets. Health crises caused by the outbreak of COVID-19 may also exacerbate other pre-existing political, social, economic, market and financial risks. The effects of the outbreak in developing or emerging market countries may be greater due to less established health care systems. The COVID-19 pandemic and its effects may be short term or may last for an extended period of time, and in either case could result in significant market volatility, exchange trading suspensions and closures, declines in global financial markets, higher default rates, and a substantial economic downturn or recession. The foregoing could impair the fund's ability to maintain operational standards (such as with respect to satisfying redemption requests), disrupt the operations of the fund's service providers, adversely affect the value and liquidity of the fund's investments, and negatively impact the fund's performance and your investment in the fund.

Securities and financial markets may be susceptible to market manipulation or other fraudulent trade practices, which could disrupt the orderly functioning of these markets, contribute to overall market volatility and adversely affect the values of the fund's investments.

Given the increasing interdependence among global economies and markets, conditions in one country, region or market might adversely affect financial conditions or issuers in other countries, regions or markets. For example, any partial or complete dissolution of the Economic and Monetary Union of the European Union, or any increased uncertainty as to its status, could have significant adverse effects on global currency and financial markets, and on the values of the fund's investments. On January 31, 2020, the United Kingdom formally withdrew from the European Union (commonly known as "Brexit"), and an 11-month transition period commenced during which most European Union law will continue to apply in the United Kingdom while it negotiates its future relationship with the European Union. While the full impact of Brexit is unknown, Brexit has already resulted in volatility in European and global markets. Potential negative long-term effects could include, among others, greater market volatility and illiquidity, disruptions to world securities markets, currency fluctuations, deterioration in economic activity, a decrease in business confidence, and an increased likelihood of a recession in the United Kingdom. To the extent the fund has focused its investments in a particular country, region or market, adverse geopolitical and other events impacting that country, region or market could have a disproportionate impact on the fund.

Money Market Instruments

Money market instruments, or short-term debt instruments, consist of obligations such as commercial paper, bank obligations (*e.g.*, certificates of deposit and bankers' acceptances), repurchase agreements, and various

government obligations, such as Treasury bills. These instruments have a remaining maturity of one year or less and are generally of high credit quality. Money market instruments may be structured to be, or may employ a trust or other form so that they are, eligible investments for money market funds. For example, put features can be used to modify the maturity of a security or interest rate adjustment features can be used to enhance price stability. If a structure fails to function as intended, adverse tax or investment consequences may result. Neither the IRS nor any other regulatory authority has ruled definitively on certain legal issues presented by certain structured securities. Future tax or other regulatory determinations could adversely affect the value, liquidity, or tax treatment of the income received from these securities or the nature and timing of distributions made by the funds.

Commercial paper is a money market instrument issued by banks or companies to raise money for short-term purposes. Commercial paper is usually sold on a discounted basis rather than as an interest-bearing instrument. Unlike some other debt obligations, commercial paper is typically unsecured, which increases the credit risk associated with this type of investment. In some cases, commercial paper may be backed by some form of credit enhancement, typically in the form of a guarantee by a commercial bank. Commercial paper backed by guarantees of foreign banks may involve additional risk due to the difficulty of obtaining and enforcing judgments against such banks and the generally less restrictive regulations to which such banks are subject. Commercial paper also may be issued as an asset-backed security (that is, backed by a pool of assets representing the obligations of a number of different issuers), in which case certain of the risks discussed in “Mortgage-backed and Asset-backed securities” would apply. Commercial paper is traded primarily among institutions.

Certificates of deposit are receipts issued by a depository institution in exchange for the deposit of funds. The issuer agrees to pay the amount deposited plus interest to the bearer of the receipt on the date specified on the certificate. The certificate usually can be traded in the secondary market prior to maturity. Certificates of deposit may include those issued by foreign banks outside the United States. Such certificates of deposit include Eurodollar and Yankee certificates of deposit. Eurodollar certificates of deposit are U.S. dollar-denominated certificates of deposit issued by branches of foreign and domestic banks located outside the United States. Yankee certificates of deposit are certificates of deposit issued by a U.S. branch of a foreign bank denominated in U.S. dollars and held in the United States.

Bankers’ acceptances typically arise from short-term credit arrangements designed to enable businesses to obtain funds to finance commercial transactions. Generally, an acceptance is a time draft drawn on a bank by an exporter or an importer to obtain a stated amount of funds to pay for specific merchandise. The draft is then “accepted” by a bank that, in effect, unconditionally guarantees to pay the face value of the instrument on its maturity date. The acceptance may then be held by the accepting bank as an earning asset or it may be sold in the secondary market at the going rate of discount for a specific maturity. Although maturities for acceptances can be as long as 270 days, most acceptances have maturities of six months or less. Putnam VT Government Money Market Fund may invest in bankers’ acceptances issued by banks with deposits in excess of \$2 billion (or the foreign currency equivalent) at the close of the last calendar year. If the Trustees change this minimum deposit requirement, shareholders would be notified. Other funds of the Trust may invest in bankers’ acceptances without regard to this requirement.

Time deposits are interest-bearing non-negotiable deposits at a bank or a savings and loan association that have a specific maturity date. A time deposit earns a specific rate of interest over a definite period of time. Time deposits cannot be traded on the secondary market and those exceeding seven days and with a withdrawal penalty are considered to be illiquid.

In accordance with rules issued by the SEC, the fund may from time to time invest all or a portion of its cash balances in money market and/or short-term bond funds advised by Putnam Management. In connection with such investments, Putnam Management may waive a portion of the advisory fees otherwise payable by the fund. See “Charges and expenses” in Part I of this SAI for the amount, if any, waived by Putnam Management in connection with such investments.

Mortgage-backed and Asset-backed Securities

Mortgage-backed securities, including collateralized mortgage obligations (“CMOs”) and certain stripped mortgage-backed securities, represent a participation in, or are secured by, mortgage loans. Mortgage-backed securities may be issued by agencies or instrumentalities of the U.S. government (including those whose securities are neither guaranteed nor insured by the U.S. government, such as Freddie Mac, Fannie Mae, and FHLBs), foreign governments (or their agencies or instrumentalities), or non-governmental issuers. Interest and principal payments (including prepayments) on the mortgage loans underlying mortgage-backed securities pass through to the holders of the mortgage-backed securities. Asset-backed securities are structured like mortgage-backed securities, but instead of mortgage loans or interests in mortgage loans, the underlying assets may include such items as motor vehicle installment sales or installment loan contracts, home equity loans, leases of various types of real, personal and other property and receivables from credit card agreements. Similar to mortgage-backed securities, other types of asset-backed securities may be issued by agencies or instrumentalities of the U.S. government (including those whose securities are neither guaranteed nor insured by the U.S. government), foreign governments (or their agencies or instrumentalities), or non-governmental issuers.

Mortgage-backed securities have yield and maturity characteristics corresponding to the underlying assets. Unlike traditional debt securities, which may pay a fixed rate of interest until maturity, when the entire principal amount comes due, payments on certain mortgage-backed securities include both interest and a partial repayment of principal. Besides the scheduled repayment of principal, repayments of principal may result from the voluntary prepayment, refinancing or foreclosure of the underlying mortgage loans. If property owners make unscheduled prepayments of their mortgage loans, these prepayments will result in early payment of the applicable mortgage-backed securities. In that event the fund may be unable to invest the proceeds from the early payment of the mortgage-backed securities in an investment that provides as high a yield as the mortgage-backed securities. Consequently, early payment associated with mortgage-backed securities may cause these securities to experience significantly greater price and yield volatility than that experienced by traditional fixed-income securities. The occurrence of mortgage prepayments is affected by factors including the level of interest rates, general economic conditions, the location and age of the mortgage and other social and demographic conditions. During periods of falling interest rates, the rate of mortgage prepayments tends to increase, thereby tending to decrease the life of mortgage-backed securities. During periods of rising interest rates, the rate of mortgage prepayments usually decreases, thereby tending to increase the life of mortgage-backed securities. If the life of a mortgage-backed security is inaccurately predicted, the fund may not be able to realize the rate of return it expected.

Adjustable rate mortgage securities (“ARMs”), like traditional mortgage-backed securities, are interests in pools of mortgage loans that provide investors with payments consisting of both principal and interest as mortgage loans in the underlying mortgage pool are paid off by the borrowers. Unlike fixed-rate mortgage-backed securities, ARMs are collateralized by or represent interests in mortgage loans with variable rates of interest. These interest rates are reset at periodic intervals, usually by reference to an interest rate index or market interest rate. Although the rate adjustment feature may act as a buffer to reduce sharp changes in the value of adjustable rate securities, these securities are still subject to changes in value based on, among other things, changes in market interest rates or changes in the issuer’s creditworthiness. If rates increase due to a reset, the risk of default by underlying borrowers may increase. Because the interest rates are reset only periodically, changes in the interest rate on ARMs may lag changes in prevailing market interest rates. The market value of an ARM may be adversely affected if interest rates increase faster than the rates of interest payable on the ARM or by the adjustable rate mortgage loans underlying the ARM. Also, some ARMs (or the underlying mortgages) are subject to caps or floors that limit the maximum change in the interest rate during a specified period or over the life of the security. As a result, changes in the interest rate on an ARM may not fully reflect changes in prevailing market interest rates during certain periods.

The fund may also invest in “hybrid” ARMs, whose underlying mortgages combine fixed-rate and adjustable rate features. A hybrid ARM is a type of mortgage in which the interest rate is fixed for a specified period and then resets periodically, or floats, for the remaining mortgage term. During the initial interest period, hybrid ARMs behave more like fixed income securities and are thus subject to the risks associated with fixed income securities. All hybrid ARMs have reset dates. A reset date is the date when a hybrid ARM changes from a fixed interest rate to a floating interest rate. At the reset date, a hybrid ARM can adjust by a maximum specified amount based on a margin over an identified index. Like ARMs, hybrid ARMs have periodic and lifetime limitations on the increases that can be made to the interest rates that mortgagors pay. Therefore, if during a floating rate period interest rates rise above the interest rate limits of the hybrid ARM, a fund holding the hybrid ARM does not benefit from further increases in interest rates.

Mortgage-backed and asset-backed securities are less effective than other types of securities as a means of “locking in” attractive long-term interest rates. One reason is the need to reinvest prepayments of principal; another is the possibility of significant unscheduled prepayments resulting from declines in interest rates. These prepayments would have to be reinvested at lower rates. The automatic interest rate adjustment feature of mortgages underlying ARMs likewise reduces the ability to lock-in attractive rates. As a result, mortgage-backed and asset-backed securities may have less potential for capital appreciation during periods of declining interest rates than other securities of comparable maturities, although they may have a similar risk of decline in market value during periods of rising interest rates. Prepayments may also significantly shorten the effective maturities of these securities, especially during periods of declining interest rates. Conversely, during periods of rising interest rates, a reduction in prepayments may increase the effective maturities of these securities, subjecting them to a greater risk of decline in market value in response to rising interest rates than traditional debt securities, and, therefore, potentially increasing the volatility of the fund.

At times, some mortgage-backed and asset-backed securities will have higher than market interest rates and therefore will be purchased at a premium above their par value. Prepayments may cause losses on securities purchased at a premium. To the extent an applicable interest rate is based on LIBOR, the fund will be exposed to certain additional risks. See “London Interbank Offered Rate (LIBOR)” above for more information.

Mortgage-backed and asset-backed securities are subject to varying degrees of credit risk, depending on whether they are issued by agencies or instrumentalities of the U.S. government (including those whose securities are neither guaranteed nor insured by the U.S. government) or by non-governmental issuers. Securities issued by private organizations may not be readily marketable, and since the deterioration of worldwide economic and liquidity conditions that became acute in 2008, mortgage-backed and asset-backed securities have been subject to greater liquidity risk. These conditions may occur again. Also, government actions and proposals affecting the terms of underlying home loans, changes in demand for products (*e.g.*, automobiles) financed by those loans, and the inability of borrowers to refinance existing loans (*e.g.*, sub-prime mortgages), have had, and may continue to have, adverse valuation and liquidity effects on mortgage-backed and asset-backed securities. Although liquidity of mortgage-backed and asset-backed securities has improved recently, there can be no assurance that in the future the market for mortgage-backed and asset-backed securities will continue to improve and become more liquid.

CMOs may be issued by a U.S. government agency or instrumentality or by a private issuer. Although payment of the principal of, and interest on, the underlying collateral securing privately issued CMOs may be guaranteed by the U.S. government or its agencies or instrumentalities (such as Freddie Mac, Fannie Mae, or Ginnie Mae), these CMOs represent obligations solely of the private issuer and are not insured or guaranteed by the U.S. government, its agencies or instrumentalities or any other person or entity. CMOs may also be less liquid and may exhibit greater price volatility than other types of mortgage- or other asset-backed securities. Prepayments could cause early retirement of CMOs. CMOs are designed to reduce the risk of prepayment for investors by issuing multiple classes of securities (or “tranches”), each having different maturities, interest rates and payment schedules, and with the principal and interest on the underlying mortgages allocated among the several classes in various ways. Payment of interest or principal on some classes or series of CMOs may be subject to contingencies or some classes or series may bear some or all of the risk of default on the underlying

mortgages. CMOs of different classes or series are generally retired in sequence as the underlying mortgage loans in the mortgage pool are repaid. If enough mortgages are repaid ahead of schedule, the classes or series of a CMO with the earliest maturities generally will be retired prior to their maturities. Thus, the early retirement of particular classes or series of a CMO would have the same effect as the prepayment of mortgages underlying other mortgage-backed securities. Conversely, slower than anticipated prepayments can extend the effective maturities of CMOs, subjecting them to a greater risk of decline in market value in response to rising interest rates than traditional debt securities, and, therefore, potentially increasing their volatility.

Prepayments could result in losses on stripped mortgage-backed securities. Stripped mortgage-backed securities are usually structured with two classes that receive different portions of the interest and principal distributions on a pool of mortgage loans. A common type of stripped mortgage-backed security will have one class receiving all of the interest from the mortgage assets (interest only or “IOs”), while the other class will receive all of the principal (principal only or “POs”). The yield to maturity on an IO class of stripped mortgage-backed securities is extremely sensitive not only to changes in prevailing interest rates but also to the rate of principal payments (including prepayments) on the underlying assets. A rapid rate of principal prepayments may have a measurable adverse effect on the fund’s yield to maturity to the extent it invests in IOs. If the assets underlying the IO experience greater than anticipated prepayments of principal, the fund may fail to recoup fully its initial investment in these securities. Conversely, POs tend to increase in value if prepayments are greater than anticipated and decline if prepayments are slower than anticipated. Generally, the market value of POs is unusually volatile in response to changes in interest rates. The secondary market for stripped mortgage-backed securities may be more volatile and less liquid than that for other mortgage-backed securities, potentially limiting the fund’s ability to buy or sell those securities at any particular time.

The risks associated with other asset-backed securities (including in particular the risks of issuer default and of early prepayment) are generally similar to those described above for CMOs. In addition, because asset-backed securities generally do not have the benefit of a security interest in the underlying assets that is comparable to a mortgage, asset-backed securities present certain additional risks that are not present with mortgage-backed securities. The ability of an issuer of asset-backed securities to enforce its security interest in the underlying assets may be limited. For example, revolving credit receivables are generally unsecured and the debtors on such receivables are entitled to the protection of a number of state and federal consumer credit laws, many of which give debtors the right to set-off certain amounts owed, thereby reducing the balance due. Automobile receivables generally are secured, but by automobiles, rather than by real property.

Asset-backed securities may be collateralized by the fees earned by service providers. The value of asset-backed securities may be substantially dependent on the servicing of the underlying asset and are therefore subject to risks associated with negligence by, or defalcation of, their servicers. In certain circumstances, the mishandling of related documentation may also affect the rights of the security holders in and to the underlying collateral. The insolvency of entities that generate receivables or that utilize the assets may result in added costs and delays in addition to losses associated with a decline in the value of the underlying assets.

Payment of interest on asset-backed securities and repayment of principal largely depends on the cash flows generated by the underlying assets backing the securities and, in certain cases, may be supported by letters of credit, surety bonds, or other credit enhancements. The amount of market risk associated with asset-backed securities depends on many factors, including the deal structure (*i.e.*, determination as to the amount of underlying assets or other support needed to produce the cash flows necessary to service interest and make principal payments), the quality of the underlying assets, the level of credit support, if any, provided for the securities, and the credit quality of the credit-support provider, if any. In recent years, a significant number of asset-backed security insurers have defaulted on their obligations.

Consistent with the fund’s investment objective and policies, the fund may invest in other types of mortgage- and asset-backed securities offered currently or in the future, including certain yet-to-be-developed types of mortgage- and asset-backed securities which may be created as the market evolves.

Options on Securities

Writing covered options. The fund may write (*i.e.*, sell) covered call options and covered put options on optionable securities held in its portfolio or that it has an absolute and immediate right to acquire without additional cash consideration (or, if additional cash consideration is required, cash or other assets determined to be liquid by Putnam Management in accordance with procedures established by the Trustees, in such amount as are set aside on the fund's books), when in the opinion of Putnam Management such transactions are consistent with the fund's goal(s) and policies. Call options written by the fund give the purchaser the right to buy the underlying securities from the fund at a stated exercise price, regardless of the security's market price; put options written by the fund give the purchaser the right to sell the underlying securities to the fund at a stated exercise price, regardless of the security's market price.

The fund may write only covered options, which means that, so long as the fund is obligated as the writer of a call option, it will own the underlying securities subject to the option (or comparable securities satisfying the cover requirements of securities exchanges) or have an absolute and immediate right to acquire without additional cash consideration (or, if additional cash consideration is required, cash or other assets determined to be liquid by Putnam Management in accordance with procedures established by the Trustees, in such amount as are set aside on the fund's books). In the case of put options, the fund will set aside on its books assets determined to be liquid by Putnam Management in accordance with procedures established by the Trustees and equal in value to the price to be paid if the option is exercised. In addition, the fund will be considered to have covered a put or call option if and to the extent that it holds an option that offsets some or all of the risk of the option it has written. The fund may write combinations of covered puts and calls (straddles) on the same underlying security.

The fund will receive a premium from writing a put or call option, which increases the fund's return on the underlying security in the event the option expires unexercised or is closed out at a profit. The amount of the premium reflects, among other things, the relationship between the exercise price and the current market value of the underlying security, the volatility of the underlying security, the amount of time remaining until expiration, current interest rates, and the effect of supply and demand in the options market and in the market for the underlying security. By writing a call option, if the fund holds the security, the fund limits its opportunity to profit from any increase in the market value of the underlying security above the exercise price of the option but continues to bear the risk of a decline in the value of the underlying security. If the fund does not hold the underlying security, the fund bears the risk that, if the market price exceeds the option strike price, the fund will suffer a loss equal to the difference at the time of exercise. By writing a put option, the fund assumes the risk that it may be required to purchase the underlying security for an exercise price higher than its then-current market value, resulting in a potential capital loss unless the security subsequently appreciates in value.

The fund may terminate an option that it has written prior to its expiration by entering into a closing purchase transaction, in which it purchases an offsetting option. A closing purchase transaction will ordinarily be effected in order to realize a profit on an outstanding option, to prevent an underlying instrument from being called, to permit the sale of the underlying instrument or to permit the writing of a new option containing different terms on such underlying instrument. The fund realizes a profit or loss from a closing transaction if the cost of the transaction (option premium plus transaction costs) is less or more than the premium received from writing the option. Because increases in the market price of a call option generally reflect increases in the market price of the security underlying the option, any loss resulting from a closing purchase transaction may be offset in whole or in part by unrealized appreciation of the underlying security.

If the fund writes a call option but does not own the underlying security, and when it writes a put option, the fund may be required to deposit cash or securities with its broker as "margin," or collateral, for its obligation to buy or sell the underlying security. As the value of the underlying security varies, the fund may have to deposit additional margin with the broker. Margin requirements are complex and are fixed by individual brokers,

subject to minimum requirements currently imposed by the Federal Reserve Board and by stock exchanges and other self-regulatory organizations.

Purchasing put options. The fund may purchase put options to protect its portfolio holdings in an underlying security against a decline in market value. Such protection is provided during the life of the put option since the fund, as holder of the option, is able to sell the underlying security at the put exercise price regardless of any decline in the underlying security's market price. If such a price decline occurs, the put option will permit the fund to sell the security at the higher exercise price or to close out the option at a profit. In order for a put option to be profitable, the market price of the underlying security must decline sufficiently below the exercise price to cover the premium and transaction costs. By using put options in this manner, the fund will reduce any profit it might otherwise have realized from appreciation of the underlying security by the premium paid for the put option and by transaction costs. The fund may also purchase put options for other investment purposes, including to take a short position in the security underlying the put option.

Purchasing call options. The fund may purchase call options to hedge against an increase in the price of securities that the fund wants ultimately to buy. Such protection is provided during the life of the call option since the fund, as holder of the call option, is able to buy the underlying security at the exercise price regardless of any increase in the underlying security's market price. If such a price increase occurs, a call option will permit the fund to purchase the securities at the exercise price or to close out the option at a profit. In order for a call option to be profitable, the market price of the underlying security must rise sufficiently above the exercise price to cover the premium and transaction costs. The fund may also purchase call options for other investment purposes.

Risk factors in options transactions. The successful use of the fund's options strategies depends on the ability of Putnam Management to forecast correctly interest rate and market movements. For example, if the fund were to write a call option based on Putnam Management's expectation that the price of the underlying security would fall, but the price were to rise instead, the fund could be required to sell the security upon exercise at a price below the current market price. Similarly, if the fund were to write a put option based on Putnam Management's expectation that the price of the underlying security would rise, but the price were to fall instead, the fund could be required to purchase the security upon exercise at a price higher than the current market price.

When the fund purchases an option, it runs the risk that it will lose its entire investment in the option in a relatively short period of time, unless the fund exercises the option or enters into a closing sale transaction before the option's expiration. If the price of the underlying security does not rise (in the case of a call) or fall (in the case of a put) to an extent sufficient to cover the option premium and transaction costs, the fund will lose part or all of its investment in the option. This contrasts with an investment by the fund in the underlying security, since the fund will not realize a loss if the security's price does not change.

The effective use of options also depends on the fund's ability to terminate option positions at times when Putnam Management deems it desirable to do so. There is no assurance that the fund will be able to effect closing transactions at any particular time or at an acceptable price. If a secondary market in options were to become unavailable, the fund could no longer engage in closing transactions. Lack of investor interest might adversely affect the liquidity of the market for particular options or series of options. A market may discontinue trading of a particular option or options generally. In addition, a market could become temporarily unavailable if unusual events -- such as volume in excess of trading or clearing capability -- were to interrupt its normal operations. Although the fund may be able to offset to some extent any adverse effects of being unable to terminate an option position, the fund may experience losses in some cases as a result of such inability.

A market may at times find it necessary to impose restrictions on particular types of options transactions, such as opening transactions. For example, if an underlying security ceases to meet qualifications imposed by the market or the Options Clearing Corporation, new series of options on that security will no longer be opened to replace expiring series, and opening transactions in existing series may be prohibited. If an options market

were to become unavailable, the fund as a holder of an option would be able to realize profits or limit losses only by exercising the option, and the fund, as option writer, would remain obligated under the option until expiration or exercise.

Disruptions in the markets for the securities underlying options purchased or sold by the fund could result in losses on the options. For example, if a fund is unable to purchase a security underlying a put option it had purchased, the fund may be unable to exercise the put option. If trading is interrupted in an underlying security, the trading of options on that security is normally halted as well. As a result, the fund as purchaser or writer of an option will be unable to close out its positions until options trading resumes, and it may be faced with considerable losses if trading in the security reopens at a substantially different price. In addition, the Options Clearing Corporation or other options markets may impose exercise restrictions. If a prohibition on exercise is imposed at the time when trading in the option has also been halted, the fund as purchaser or writer of an option will be locked into its position until one of the two restrictions has been lifted. If the Options Clearing Corporation were to determine that the available supply of an underlying security appears insufficient to permit delivery by the writers of all outstanding calls in the event of exercise, it may prohibit indefinitely the exercise of put options. The fund, as holder of such a put option, could lose its entire investment if it is unable to exercise the put option prior to its expiration.

The fund may use both European-style options, which are only exercisable immediately prior to their expiration, and American-style options, which are exercisable at any time prior to the expiration date. Since an American-style option allows the holder to exercise its rights any time before the option's expiration, the writer of an American-style option has no control over when it will be required to fulfill its obligations as a writer of the option. (The writer of a European-style option is not subject to this risk because the holder may only exercise the option on its expiration date.)

Options can be traded either through established exchanges ("exchange traded options") or privately negotiated transactions (over-the-counter or "OTC" options). Exchange traded options are standardized with respect to, among other things, the underlying interest, expiration date, contract size and strike price. The terms of OTC options are generally negotiated by the parties to the option contract which allows the parties greater flexibility in customizing the agreement, but OTC options are generally less liquid than exchange traded options. OTC options purchased by the fund and assets held to cover OTC options written by the fund may, under certain circumstances, be considered illiquid securities for purposes of any limitation on the fund's ability to invest in illiquid securities. All option contracts involve credit risk if the counterparty to the option contract (*e.g.*, the clearing house or OTC counterparty) or the third party effecting the transaction in the case of cleared options (*e.g.*, futures commission merchant or broker/dealer) fails to perform. The credit risk in OTC options that are not cleared is dependent on the credit worthiness of the individual counterparty to the contract and may be greater than the credit risk associated with cleared options.

Foreign-traded options are subject to many of the same risks presented by internationally-traded securities. In addition, because of time differences between the United States and other countries, and because different holidays are observed in different countries, foreign options markets may be open for trading during hours or on days when U.S. markets are closed. As a result, option premiums may not reflect the current prices of the underlying interest in the United States.

There are significant differences between the securities and options markets that could result in an imperfect correlation between these markets, causing a given transaction not to achieve its objectives. In addition, many options, in particular OTC options, are complex and often valued based on subjective factors. Improper valuations can result in increased cash payment requirements to counterparties or a loss of value to the fund.

The market price of an option is affected by many factors, including changes in the market prices or dividend rates of underlying securities (or in the case of indices, the securities in such indices); the time remaining before expiration; changes in interest rates or exchange rates; and changes in the actual or perceived volatility

of the relevant stock market and underlying securities. The market price of an option also may be adversely affected if the market for the option becomes less liquid.

In addition to options on securities and futures, the fund may also enter into options on futures, swaps, or other instruments as described elsewhere in this SAI.

Preferred Stocks and Convertible Securities

The fund may invest in preferred stocks or convertible securities. A preferred stock is a class of stock that generally pays dividends at a specified rate and has preference over common stock in the payment of dividends and the liquidation of an issuer's assets but is junior to the debt securities of the issuer in those same respects. Under ordinary circumstances, preferred stock does not carry voting rights. As with all equity securities, the value of preferred stock fluctuates based on changes in a company's financial condition and on overall market and economic conditions. The value of preferred stocks is particularly sensitive to changes in interest rates and is more sensitive to changes in an issuer's creditworthiness than is the value of debt securities. In addition, many preferred stocks may be called or redeemed prior to their maturity by the issuer under certain conditions, which can limit the benefit to investors of a decline in interest rates. Shareholders of preferred stock may suffer a loss of value if dividends are not paid. Additionally, if the issuer of preferred stock experiences economic or financial difficulties, its preferred stock may lose value due to the reduced likelihood that its board of directors will declare a dividend. Certain preferred stocks contain provisions that allow an issuer under certain conditions to skip or defer distributions. If the fund owns a preferred stock that is deferring its distribution, it may be required to report income for tax purposes despite the fact that it is not receiving current income on this position. Preferred stocks often are subject to legal provisions that allow for redemption in the event of certain tax or legal changes or at the issuer's call. In the event of redemption, the fund may not be able to reinvest the proceeds at comparable rates of return. Preferred stocks are subordinated to bonds and other debt securities in an issuer's capital structure in terms of priority for corporate income and liquidation payments, and therefore will be subject to greater credit risk than those debt securities. Preferred stocks may trade less frequently and in a more limited volume and may be subject to more abrupt or erratic price movements than many other securities, such as common stocks, corporate debt securities, and U.S. government securities.

Convertible securities include bonds, debentures, notes, preferred stocks and other securities that may be converted into or exchanged for, at a specific price or formula within a particular period of time, a prescribed amount of common stock or other equity securities of the same or a different issuer. The conversion may occur automatically upon the occurrence of a predetermined event or at the option of either the issuer or the security holder. The holder of a convertible security is generally entitled to participate in the capital appreciation resulting from a market price increase in the issuer's common stock and to receive interest paid or accrued on debt or dividends paid or accrued until the convertible security matures or is redeemed, converted or exchanged. Before conversion, convertible securities have characteristics similar to non-convertible debt or preferred securities, as applicable. Convertible securities rank senior to common stock in an issuer's capital structure and, therefore, normally entail less risk than the issuer's common stock. However, convertible securities may also be subordinate to any senior debt obligations of the issuer, and, therefore, an issuer's convertible securities may entail more risk than such senior debt obligations. Convertible securities usually offer lower interest or dividend yields than non-convertible debt securities of similar credit quality because of the potential for capital appreciation. In addition, convertible securities are often lower-rated securities.

The market value of a convertible security is a function of its "investment value" and its "conversion value." A security's "investment value" represents the value of the security without its conversion feature (*i.e.*, a nonconvertible fixed income security). The investment value may be determined by reference to its credit quality and the current value of its yield to maturity or probable call date. At any given time, investment value may be dependent upon such factors as the general level of interest rates, the yield of similar nonconvertible securities, the financial strength of the issuer and the seniority of the security in the issuer's capital structure. A security's "conversion value" is determined by multiplying the number of shares the holder is entitled to receive upon conversion or exchange by the current market price of the underlying security. Because of the conversion feature, the market value of a convertible security will normally fluctuate in some proportion to

changes in the market value of the underlying security, and, accordingly, convertible securities are subject to risks relating to the activities of the issuer and/or general market and economic conditions.

A convertible security generally will sell at a premium over its conversion value by the extent to which investors place value on the right to acquire the underlying common stock while holding a fixed income security. If the conversion value of a convertible security is significantly below its investment value, the convertible security generally trades like nonconvertible debt or preferred stock and its market value will not be influenced greatly by fluctuations in the market price of the underlying security. Conversely, if the conversion value of a convertible security is near or above its investment value, the market value of the convertible security is typically more heavily influenced by fluctuations in the market price of the underlying security. Generally, the amount of the premium decreases as the convertible security approaches maturity. Convertible securities generally have less potential for gain than common stocks.

The fund's investments in convertible securities may at times include securities that have a mandatory conversion feature, pursuant to which the securities convert automatically into common stock or other equity securities at a specified date and a specified conversion ratio, or that are convertible at the option of the issuer. Because conversion of the security is not at the option of the holder, the fund may be required to convert the security into the underlying common stock even at times when the value of the underlying common stock or other equity security has declined substantially.

The fund's investments in preferred stocks and convertible securities, particularly securities that are convertible into securities of an issuer other than the issuer of the convertible security, may be illiquid. The fund may not be able to dispose of such securities in a timely fashion or for a fair price, which could result in losses to the fund.

Private Placements and Restricted Securities

The fund may invest in securities that are purchased in private placements and, accordingly, are subject to restrictions on resale as a matter of contract or under federal securities laws. Because there may be relatively few potential purchasers for such investments, especially under adverse market or economic conditions or in the event of adverse changes in the financial condition of the issuer, the fund could find it more difficult to sell such securities when Putnam Management believes it advisable to do so or may be able to sell such securities only at prices lower than if such securities were more widely held. There can be no assurance that a liquid market will exist for any such security at any particular time, and a security which when purchased was liquid in the institutional markets may subsequently become illiquid.

Many private placement securities are issued by companies that are not required to file periodic financial reports, leading to challenges in evaluating the company's overall business prospects and gauging how the investment is likely to perform over time. In addition, market quotations for these securities are less readily available. Due to the more limited financial information and lack of publicly available prices, it may be more difficult to determine the fair value of these securities for purposes of computing the fund's net asset value. As a result, the judgment of Putnam Management may at times play a greater role in valuing these securities than in the case of publicly traded securities, and the fair value prices determined for the fund could differ from those of other market participants.

While such private placements may offer attractive opportunities for investment not otherwise available on the open market, the securities so purchased are often "restricted securities," *i.e.*, securities which cannot be sold to the public without registration under the Securities Act of 1933 (the "Securities Act") or the availability of an exemption from registration (such as Rules 144, 144A or Regulation S), or which are "not readily marketable" because they are subject to other legal or contractual delays in or restrictions on resale. In addition, the issuer

typically does not have an obligation to provide liquidity to investors by buying the securities back when the investor wants to sell. Disposing of these securities may involve time-consuming negotiation and legal expenses, and it may be difficult or impossible for the fund to sell them promptly at an acceptable price. The fund may have to bear the extra expense of registering these securities for resale and the risk of substantial delay in effecting the registration. Since the offering is not registered with the SEC, investors in a private placement have less protection under the federal securities laws against improper practices than investors in registered securities.

Generally speaking, restricted securities may be sold only to qualified institutional buyers, or in a privately negotiated transaction to a limited number of purchasers, or in limited quantities after they have been held for a specified period of time and other conditions are met pursuant to an exemption from registration, or in a public offering for which a registration statement is in effect under the Securities Act. The fund may be deemed to be an “underwriter” for purposes of the Securities Act when selling restricted securities to the public, and in such event the fund may be liable to purchasers of such securities if the registration statement prepared by the issuer, or the prospectus forming a part of it, is materially inaccurate or misleading. The SEC Staff currently takes the view that any delegation by the Trustees of the authority to determine that a restricted security is readily marketable (as described in the investment restrictions of the funds) must be pursuant to written procedures established by the Trustees and the Trustees have delegated such authority to Putnam Management.

Real Estate Investment Trusts (REITs)

The fund may invest in REITs. REITs are pooled investment vehicles that invest primarily in income-producing real estate or real estate related loans or interests. REITs may concentrate their investments in specific geographic areas or in specific property types (*i.e.*, hotels, shopping malls, residential complexes and office buildings). Like regulated investment companies such as the fund, REITs are not taxed on income distributed to shareholders provided that they comply with certain requirements under the Code. The fund will indirectly bear its proportionate share of any expenses (such as operating expenses and advisory fees) paid by REITs in which it invests in addition to the fund’s own expenses.

Investing in REITs may involve certain unique risks in addition to those risks associated with investing in the real estate industry in general (such as possible declines in the value of real estate, lack of availability of mortgage funds, or extended vacancies of property). The market value of REIT shares and the ability of the REITs to distribute income may be adversely affected by several factors, including rising interest rates, changes in the national, state and local economic climate and real estate conditions, perceptions of prospective tenants of the safety, convenience and attractiveness of the properties, the ability of the owners to provide adequate management, maintenance and insurance, the cost of complying with the Americans with Disabilities Act, increased competition from new properties, the impact of present or future environmental legislation and compliance with environmental laws, failing to maintain their exemptions from registration under the Investment Company Act, changes in real estate taxes and other operating expenses, adverse changes in governmental rules and fiscal policies, adverse changes in zoning laws, and other factors beyond the control of the issuers of the REITs.

REITs are generally classified as equity REITs, mortgage REITs or a combination of equity and mortgage REITs (“hybrid REITs”). Equity REITs invest the majority of their assets directly in real property and derive income primarily from the collection of rents. Equity REITs can also realize capital gains by selling properties that have appreciated in value. Mortgage REITs invest the majority of their assets in real estate mortgages and derive income from the collection of interest payments. Equity REITs may be affected by changes in the value of the underlying property owned by the REITs, while mortgage REITs may be affected by the risk of borrower default, the likelihood of which is increased for mortgage REITs that invest in sub-prime mortgages. REITs, and mortgage REITs in particular, are also subject to interest rate risk. Rising interest rates may cause REIT investors to demand a higher annual yield, which may, in turn, cause a decline in the market price of the equity securities issued by a REIT. Rising interest rates also generally increase the costs of obtaining financing, which could cause the value of the fund’s REIT investments to decline. During periods when

interest rates are declining, mortgages are often refinanced. Refinancing may reduce the yield on investments in mortgage REITs. In addition, since REITs depend on payment under their mortgage loans and leases to generate cash to make distributions to their shareholders, investments in REITs may be adversely affected by defaults on such mortgage loans or leases. A hybrid REIT combines the characteristics of equity REITs and mortgage REITs, generally by holding both ownership interests and mortgage interests in real estate, and thus may be subject to risks associated with both real estate ownership and investments in mortgage-related securities.

Investing in certain REITs, which often have small market capitalizations, may also involve the same risks as investing in other small capitalization companies. REITs may have limited financial resources and their securities may trade less frequently and in limited volume and may be subject to more abrupt or erratic price movements than larger company securities. Historically, small capitalization stocks, such as REITs, have been more volatile in price than the larger capitalization stocks such as those included in the S&P 500 Index. The management of a REIT may be subject to conflicts of interest with respect to the operation of the business of the REIT and may be involved in real estate activities competitive with the REIT. REITs may own properties through joint ventures or in other circumstances in which the REIT may not have control over its investments. REITs may incur significant amounts of leverage.

REITs are dependent upon their operators' management skills, are generally not diversified (except to the extent the Code requires), and are subject to heavy cash flow dependency, borrower default or self-liquidation. REITs are also subject to the possibility of failing to qualify for the tax-advantaged treatment available to REITs under the Code or failing to maintain their exemptions from registration under the 1940 Act. In addition, REITs may be adversely affected by changes in federal tax law, for example, by limiting their permissible businesses or investments. REITs may have limited financial resources, may trade less frequently and in a limited volume, and may be subject to more abrupt or erratic price movements than more widely held securities.

The fund's investment in a REIT may result in the fund making distributions that constitute a return of capital to fund shareholders for federal income tax purposes or may require the fund to accrue and distribute income not yet received. In addition, distributions by a fund from REITs will not qualify for the corporate dividends-received deduction, or, generally, for treatment as qualified dividend income.

Redeemable Securities

Certain securities held by the fund may permit the issuer at its option to "call" or redeem its securities. Issuers of redeemable securities are generally more likely to exercise a "call" option in periods when interest rates are below the rate at which the original security was issued. If an issuer were to redeem securities held by the fund during a time of declining interest rates, the fund may not be able to reinvest the proceeds in securities providing the same investment return as the securities redeemed. The fund also may fail to recover additional amounts (*i.e.*, premiums) paid for securities with higher interest rates, resulting in an unexpected capital loss.

Repurchase Agreements

Under normal circumstances, each fund may enter into repurchase agreements amounting to not more than 25% of its total assets, except that this 25% limitation does not apply to repurchase agreements entered into in connection with short sales and to investments by a money market fund and Putnam Short Term Investment Fund. Money market funds and Putnam Short Term Investment Fund may invest without limit in repurchase agreements. A repurchase agreement is a contract under which the fund, the buyer under the contract, acquires a security for a relatively short period (usually not more than one week) subject to the obligation of the seller (or repurchase agreement counterparty) to repurchase, and the fund to resell, the security at a fixed time and price, which represents the fund's cost plus interest (or, for repurchase agreements under which the fund acquires a security and then sells it short, the fund's cost of "borrowing" the security). A repurchase agreement with a stated maturity of longer than one week is generally considered an illiquid investment. It is the fund's

present intention to enter into repurchase agreements only with banks and registered broker-dealers. The fund may enter into repurchase agreements, including with respect to securities it wishes to sell short. See “Short Sales” in this SAI. Certain of the repurchase agreements related to securities sold short may provide that, at the option of the fund, settlement may be made by delivery of cash equal to the difference between (a) the sum of (i) the market value of the securities sold short at the time the repurchase agreement is closed out and (ii) transaction costs associated with the acquisition in the market by the repurchase agreement counterparty of the securities sold short and (b) the repurchase price specified in the repurchase agreement.

The fund may be exposed to the credit risk of the repurchase agreement counterparty (or seller) in the event that the counterparty is unable or unwilling to close out the repurchase agreement in accordance with its terms or the parties disagree as to the meaning or application of those terms. In such an event, the fund may be subject to expenses, delays, and risk of loss, including: (i) possible declines in the value of the underlying security while the fund seeks to enforce its rights under the agreement; (ii) possible reduced levels of income and lack of access to income during this period; and (iii) the inability to enforce its rights and the expenses involved in attempted enforcement. If the seller defaults, the fund could realize a loss on the sale of the underlying security to the extent that the proceeds of the sale including accrued interest are less than the resale price provided in the agreement including interest. In addition, if the seller should be involved in bankruptcy or insolvency proceedings, the fund may incur delay and costs in selling the underlying security or may suffer a loss of principal and interest if the fund is treated as an unsecured creditor and required to return the underlying collateral to the seller’s estate. The fund is also subject to the risk that the repurchase agreement instrument may not perform as expected.

Pursuant to an exemptive order issued by the SEC, the fund may transfer uninvested cash balances into a joint account, along with cash of other Putnam funds and certain other accounts. These balances may be invested in one or more repurchase agreements and/or short-term money market instruments.

The fund may also enter into reverse repurchase agreements. Under a reverse repurchase agreement, the fund sells portfolio assets to another party subject to an agreement by the fund to repurchase the same assets from that party at an agreed upon price and date. During the reverse repurchase agreement period, the fund continues to receive principal and interest payments on the assets and also has the opportunity to earn a return on the collateral furnished by the counterparty to secure its obligation to redeliver the assets. The fund can use the proceeds received from entering into a reverse repurchase agreement to make additional investments, which generally causes the fund’s portfolio to behave as if it were leveraged.

When entering into a reverse repurchase agreement, the fund bears the risk of delay and costs involved in recovery of securities if the initial purchaser of the securities fails to return the securities upon repurchase or fails financially. These delays and costs could be greater with respect to foreign securities. Although securities repurchase transactions are generally marked to market daily, the fund also faces the risk that securities subject to a reverse repurchase transaction will decline quickly in value, and the fund will remain obligated to repurchase those securities at a higher price, potentially resulting in a loss. If the buyer in a reverse repurchase agreement files for bankruptcy or becomes insolvent, the fund may be unable to recover the securities it sold and as a result would realize a loss equal to the difference between the value of those securities and the payment it received for them. The size of this loss will depend upon the difference between what the buyer paid for the securities the fund sold to it and the value of those securities (*e.g.*, a buyer may pay \$95 for a bond with a market value of \$100). In the event of a buyer’s bankruptcy or insolvency, the fund’s use of proceeds from the sale of its securities may be restricted while the other party or its trustee or receiver determines whether to honor the fund’s right to repurchase the securities. The fund’s use of reverse repurchase agreements also subjects the fund to interest costs based on the difference between the sale and repurchase price of a security involved in such a transaction. Additionally, reverse repurchase agreements entail the same risks as over-the-counter derivatives. These include the risk that the counterparty to the reverse repurchase agreement may not be able to fulfill its obligations, as discussed above, that the parties may disagree as to the meaning or application of contractual terms, or that the instrument may not perform as expected.

Securities Loans

The fund may make secured loans of its portfolio securities, on either a short-term or long-term basis, amounting to not more than 25% of its total assets, thereby potentially realizing additional income. The risks in lending portfolio securities, as with other extensions of credit, consist of possible delay in recovery of the securities or possible loss of rights in the collateral should the borrower fail financially. If a borrower defaults, the value of the collateral may decline before the fund can dispose of it. As a matter of policy, securities loans are made to broker-dealers or other financial institutions pursuant to agreements requiring that the loans be continuously secured by collateral consisting of cash or short-term debt obligations at least equal at all times to the value of the securities on loan, “marked-to-market” daily. The borrower pays to the fund an amount equal to any dividends or interest received on securities lent. The fund retains all or a portion of the interest received on investment of the cash collateral or receives a fee from the borrower. The fund bears the risk of any loss on the investment of the collateral; any such loss may exceed, potentially by a substantial amount, any profit to the fund from its securities lending activities. Although voting rights, or rights to consent, with respect to the loaned securities may pass to the borrower, the fund retains the right to call the loans at any time on reasonable notice, and it will do so to enable the fund to exercise voting rights on any matters materially affecting the investment. The fund may also call such loans in order to sell the securities. The fund may pay fees in connection with arranging loans of its portfolio securities.

Securities of Other Investment Companies

Securities of other investment companies, including shares of open- and closed-end investment companies and unit investment trusts (which may include ETFs), represent interests in collective investment portfolios that, in turn, invest directly in underlying instruments. The fund may invest in other investment companies when it has more uninvested cash than Putnam Management believes is advisable, when it receives cash collateral from securities lending arrangements, when there is a shortage of direct investments available, or when Putnam Management believes that investment companies offer attractive values.

Investment companies may be structured to perform in a similar fashion to a broad-based securities index or may focus on a particular strategy or class of assets. ETFs typically seek to track the performance or dividend yield of specific indexes or companies in related industries, though unlike the index, an ETF incurs administrative expenses and transaction costs in trading securities. These indexes may be broad-based, sector-based or international. Investing in investment companies involves substantially the same risks as investing directly in the underlying instruments, but also involves expenses at the investment company-level, such as portfolio management fees and operating expenses. These expenses are in addition to the fees and expenses of the fund itself, which may lead to duplication of expenses while the fund owns another investment company’s shares. In addition, investing in investment companies involves the risk that they will not perform in exactly the same fashion, or in response to the same factors, as the underlying instruments or index. To the extent the fund invests in other investment companies that are professionally managed, its performance will also depend on the investment and research abilities of investment managers other than Putnam Management.

Open-end investment companies typically offer their shares continuously at net asset value plus any applicable sales charge and stand ready to redeem shares upon shareholder request. The shares of certain other types of investment companies, such as ETFs and closed-end investment companies, typically trade on a stock exchange or over-the-counter at a premium or a discount to their net asset value. In the case of closed-end investment companies, the number of shares is typically fixed. The securities of closed-end investment companies and ETFs carry the risk that the price the fund pays or receives may be higher or lower than the investment company’s net asset value. ETFs also are subject to the risk that the timing and magnitude of cash inflows and outflows from and to investors buying and redeeming shares in the ETF could create cash balances that cause the ETF’s performance to deviate from the index (which remains “fully invested” at all times). Performance of an ETF and the index it is designed to track also may diverge because the composition of the index and the securities held by the ETF may occasionally differ. ETFs and closed-end investment companies are also subject to certain additional risks, including the risks of illiquidity and of possible trading halts or

interruptions due to policies of the relevant exchange, unusual market conditions or other reasons. There can be no assurance that shares of a closed-end investment company or ETF will continue to be listed on an active exchange. The shares of investment companies, particularly closed-end investment companies, may also be leveraged, which would increase the volatility of the fund's net asset value.

The extent to which the fund can invest in securities of other investment companies, including ETFs, is generally limited by federal securities laws. For more information regarding the tax treatment of ETFs, please see "Taxes" below.

Short Sales

The fund may engage in short sales of securities either as a hedge against potential declines in value of a portfolio security or to realize appreciation when a security that the fund does not own declines in value. Short sales are transactions in which the fund sells a security it does not own to a third party by borrowing the security in anticipation of purchasing the same security at the market price on a later date to close out the short position. The fund may also engage in short sales by entering into a repurchase agreement with respect to the security it wishes to sell short. See "- Repurchase Agreements" in this SAI. The fund will incur a gain if the price of the security declines between the date of the short sale and the date on which the fund replaces the borrowed security (or closes out the related repurchase agreement); and the fund will incur a loss if the price of the security increases between those dates. Such a loss is theoretically unlimited since the potential increase in the market price of the security sold short is not limited. Until the security is replaced, the fund must pay the lender (or repurchase agreement counterparty) any dividends or interest that accrues during the period of the loan (or repurchase agreement). To borrow (or enter into a repurchase agreement with respect to) the security, the fund also may be required to pay a premium, which would increase the cost of the security sold. The fund's successful use of short sales is subject to Putnam Management's ability to accurately predict movements in the market price of the security sold short. Short selling may involve financial leverage because the fund is exposed both to changes in the market price of the security sold short and to changes in the value of securities purchased with the proceeds of the short sale, effectively leveraging its assets. Under adverse market conditions, a fund may have difficulty purchasing securities to meet its short sale delivery obligations, and may be required to close out its short position at a time when the fund would not choose to do so, and may therefore have to sell portfolio securities to raise the capital necessary to meet its short sale obligations at a time when fundamental investment considerations may not favor such sales. There is also a risk that a borrowed security will need to be returned to the lender on short notice. If a request for return of borrowed securities and/or currencies occurs at a time when other short sellers of the securities and/or currencies are receiving similar requests, a "short squeeze" can occur, and the fund may be compelled to replace borrowed securities and/or currencies previously sold short with purchases on the open market at the most disadvantageous time, possibly at prices significantly in excess of the proceeds received in originally selling the securities and/or currencies short. In addition, the fund may have difficulty purchasing securities and/or currencies to meet its delivery obligations in the case of less liquid securities and/or currencies sold short by the fund, such as certain emerging market country securities or securities of companies with smaller market capitalizations. While the fund has an open short position, it will segregate, by appropriate notation on its books or the books of its custodian, cash or liquid assets at least equal in value to the market value of the securities sold short. The segregated amount will be "marked-to-market" daily. Because of this segregation, the fund does not consider these transactions to be "senior securities" for purposes of the 1940 Act. In connection with short sale transactions, the fund may be required to pledge certain additional assets for the benefit of the securities lender (or repurchase agreement counterparty) and the fund may, while such assets remain pledged, be limited in its ability to invest those assets in accordance with the fund's investment strategies.

Short selling is a technique that may be considered speculative and involves risks beyond the initial capital necessary to secure each transaction. It should be noted that possible losses from short sales differ from those losses that could arise from a cash investment in a security because losses from a short sale may be limitless, while the losses from a cash investment in a security cannot exceed the total amount of the investment in the security.

Certain of the repurchase agreements related to securities sold short may provide that, at the option of the fund, in lieu of delivering the securities sold short, settlement may be made by delivery of cash equal to the difference between (a) the sum of (i) the market value of the securities sold short at the time the repurchase agreement is closed out and (ii) transaction costs associated with the acquisition in the market by the repurchase agreement counterparty of the securities sold short and (b) the repurchase price specified in the repurchase agreement. Because that cash amount represents the fund's maximum loss in the event of the insolvency of the counterparty, the fund will, except where the local market practice for foreign securities to be sold short requires payment prior to delivery of such securities, treat such amount, rather than the full notional amount of the repurchase agreement, as its "investment" in securities of the counterparty for purposes of all applicable investment restrictions, including its fundamental policy with respect to diversification.

Short-Term Trading

In seeking the fund's objective(s), Putnam Management will buy or sell portfolio securities whenever Putnam Management believes it appropriate to do so. From time to time the fund will buy securities intending to seek short-term trading profits. A change in the securities held by the fund is known as "portfolio turnover" and generally involves some expense to the fund. This expense may include brokerage commissions or dealer markups and other transaction costs on both the sale of securities and the reinvestment of the proceeds in other securities. If sales of portfolio securities cause the fund to realize net short-term capital gains, such gains will be taxable as ordinary income when distributed to taxable individual shareholders. As a result of the fund's investment policies, under certain market conditions the fund's portfolio turnover rate may be higher than that of other mutual funds. Portfolio turnover rate for a fiscal year is the ratio of the lesser of purchases or sales of portfolio securities to the monthly average of the value of portfolio securities -- excluding securities whose maturities at acquisition were one year or less. The fund's portfolio turnover rate is not a limiting factor when Putnam Management considers a change in the fund's portfolio.

Special Purpose Acquisition Companies

The fund may invest in stock, rights, warrants, and other securities of special purpose acquisition companies ("SPACs") or similar special purpose entities. A SPAC is a publicly traded company that raises investment capital in the form of a blind pool via an IPO for the purpose of acquiring an existing company. The shares of a SPAC are typically issued in "units" that include one share of common stock and one right or warrant (or partial right or warrant) conveying the right to purchase additional shares or partial shares. At a specified time following the SPAC's IPO (generally 1-2 months), the rights and warrants may be separated from the common stock at the election of the holder, after which they become freely tradeable. After going public and until an acquisition is completed, a SPAC generally invests the proceeds of its IPO (less a portion retained to cover expenses), which are held in trust, in U.S. government securities, money market securities and cash. To the extent the SPAC is invested in cash or similar securities, this may impact a Fund's ability to meet its investment objective. If a SPAC does not complete an acquisition within a specified period of time after going public, the SPAC is dissolved, at which point the invested funds are returned to the SPAC's shareholders (less certain permitted expenses) and any rights or warrants issued by the SPAC expire worthless.

Because SPACs and similar entities are in essence blank check companies without an operating history or ongoing business other than seeking acquisitions, the value of their securities is particularly dependent on the ability of the entity's management to identify and complete a profitable acquisition. Some SPACs may pursue acquisitions only within certain industries or regions, which may increase the volatility of their prices. In addition, the securities issued by a SPAC, which are typically traded in the over-the-counter market, may be considered illiquid and/or be subject to restrictions on resale.

Structured Investments

A structured investment is a security having a return tied to an underlying index or other security or asset class. Structured investments generally are individually negotiated agreements and may be traded over-the-counter.

Structured investments are organized and operated to restructure the investment characteristics of the underlying security. This restructuring involves the deposit with or purchase by an entity, such as a corporation or trust, or specified instruments (such as commercial bank loans) and the issuance by that entity or one or more classes of securities (“structured securities”) backed by, or representing interests in, the underlying instruments. The cash flow on the underlying instruments may be apportioned among the newly issued structured securities to create securities with different investment characteristics, such as varying maturities, payment priorities and interest rate provisions, and the extent of such payments made with respect to structured securities is dependent on the extent of the cash flow on the underlying instruments. Because structured securities typically involve no credit enhancement, their credit risk generally will be equivalent to that of the underlying instruments. Investments in structured securities are generally of a class of structured securities that is either subordinated or unsubordinated to the right of payment of another class. Subordinated structured securities typically have higher yields and present greater risks than unsubordinated structured securities. Structured securities are typically sold in private placement transactions, and there currently is no active trading market for structured securities. Investments in government and government-related and restructured debt instruments are subject to special risks, including the inability or unwillingness to repay principal and interest, requests to reschedule or restructure outstanding debt and requests to extend additional loan amounts.

Swap Agreements

The fund may enter into swap agreements and other types of over-the-counter transactions such as caps, floors and collars with broker-dealers or other financial institutions for hedging or investment purposes. A swap involves the exchange by the fund with another party of their respective commitments to pay or receive cash flows, *e.g.*, an exchange of floating rate payments for fixed-rate payments. The purchase of a cap entitles the purchaser, to the extent that a specified index or other underlying financial measure exceeds a predetermined value on a predetermined date or dates, to receive payments on a notional principal amount from the party selling the cap. The purchase of a floor entitles the purchaser, to the extent that a specified index or other underlying financial measure falls or other underlying measure below a predetermined value on a predetermined date or dates, to receive payments on a notional principal amount from the party selling the floor. A collar combines elements of a cap and a floor.

Swap agreements and similar transactions can be individually negotiated and structured to include exposure to a variety of different types of investments or market factors. A swap agreement may be structured with reference to an index of securities that is created and maintained by the swap counterparty. Depending on their structures, swap agreements may increase or decrease the fund’s exposure to long-or short-term interest rates (in the United States or abroad), foreign currency values, mortgage securities, mortgage rates, corporate borrowing rates, or other factors such as security prices, inflation rates or the volatility of an index or one or more securities. For example, if the fund agrees to exchange payments in U.S. dollars for payments in a non-U.S. currency, the swap agreement would tend to decrease the fund’s exposure to U.S. interest rates and increase its exposure to that non-U.S. currency and interest rates. To the extent an applicable interest rate is based on LIBOR, the fund will be exposed to certain additional risks. See “London Interbank Offered Rate (LIBOR)” above for more information.

The fund may also engage in total return swaps, in which payments made by the fund or the counterparty are based on the total return of a particular reference asset or assets (such as an equity or fixed-income security, a combination of such securities, or an index). Total return swap agreements may be used to obtain exposure to a security, commodity, or market without owning or taking physical custody of such security or investing directly in such market. The fund may also enter into swap agreements on futures contracts including, but not limited to, index futures contracts. Swap agreements on futures contracts are generally subject to the same risks involved in the fund’s use of futures contracts, in addition to the risks involved in the fund’s use of swap agreements. See “-Futures Contracts and Related Options.” A total return swap, or a swap on a futures contract, may add leverage to a portfolio by providing investment exposure to an underlying asset or market where the fund does not own or take physical custody of such asset or invest directly in such market.

The value of the fund's swap positions would increase or decrease depending on the changes in value of the underlying rates, currency values, volatility or other indices or measures. Caps and floors have an effect similar to buying or writing options. Depending on how they are used, swap agreements may increase or decrease the overall volatility of the fund's investments and its share price. The fund's ability to engage in certain swap transactions may be limited by tax considerations.

The fund's ability to realize a profit from such transactions will depend on the ability of the financial institutions with which it enters into the transactions to meet their obligations to the fund. If a counterparty's creditworthiness declines, the value of the agreement would be likely to decline, potentially resulting in losses. If a default occurs by the other party to such transaction, the fund will have contractual remedies pursuant to the agreements related to the transaction, which may be limited by applicable law in the case of a counterparty's insolvency. If the returns of an index upon which a swap is based are unavailable or cannot be calculated (including where the index is created and maintained by the swap counterparty), the fund may experience difficulty in valuing the swap or in determining the amounts owed to or by the counterparty, regardless of whether the counterparty has defaulted. Under certain circumstances, suitable transactions may not be available to the fund, or the fund may be unable to close out its position under such transactions at the same time, or at the same price, as if it had purchased comparable publicly traded securities. Swaps carry counterparty risks that cannot be fully anticipated. Also, because swap transactions typically involve a contract between the two parties, such swap investments can be extremely illiquid, as it is uncertain as to whether another counterparty would wish to take assignment of the rights under the swap contract at a price acceptable to the fund.

The fund's investments in swaps will generate ordinary income and losses for federal income tax purposes and may cause the fund to recognize income without receiving cash with which to make the distributions necessary to qualify and be eligible for treatment as a regulated investment company and avoid a fund-level tax. The fund may therefore need to liquidate other investments, including when it is not advantageous to do so, to meet its distribution requirement. The fund is not permitted to carry forward any net ordinary losses it realizes in a taxable year to offset ordinary income it realizes in subsequent taxable years.

A credit default swap is an agreement between the fund and a counterparty that enables the fund to buy or sell protection against a credit event related to a particular issuer. One party, acting as a "protection buyer," makes periodic payments to the other party, a "protection seller," in exchange for a promise by the protection seller to make a payment to the protection buyer if a negative credit event (such as a delinquent payment or default) occurs with respect to a referenced bond or group of bonds. Credit default swaps may also be structured based on the debt of a basket of issuers, rather than a single issuer, and may be customized with respect to the default event that triggers purchase or other factors (for example, the Nth default within a basket, or defaults by a particular combination of issuers within the basket, may trigger a payment obligation). The fund may enter into credit default swap contracts for investment purposes. As a credit protection seller in a credit default swap contract, the fund would be required to pay the par (or other agreed-upon) value of a referenced debt obligation to the counterparty in the event of a default by a third party, such as a U.S. or non-U.S. corporate issuer, on the debt obligation. In return for its obligation, the fund would receive from the counterparty a periodic stream of payments over the term of the contract provided that no event of default has occurred. If no default occurs, the fund would keep the stream of payments and would have no payment obligations to the counterparty. As the seller, the fund would be subject to investment exposure on the notional amount of the swap.

The fund may also purchase credit default swap contracts in order to hedge against the risk of default of the debt of a particular issuer or basket of issuers or attempt to profit from changes or perceived changes in the creditworthiness of the particular issuer(s) (also known as "buying credit protection"). In these cases, the fund would function as the counterparty referenced in the preceding paragraph. This would involve the risk that the investment may expire worthless and would only generate income in the event of an actual default by the issuer(s) of the underlying obligation(s) (or, as applicable, a credit downgrade or other indication of financial instability). It would also involve the risk that the seller may fail to satisfy its payment obligations to the fund

in the event of a default. The purchase of credit default swaps involves costs, which will reduce the fund's return.

Credit default swaps involve a number of special risks. A protection seller may have to pay out amounts following a negative credit event greater than the value of the reference obligation delivered to it by its counterparty and the amount of periodic payments previously received by it from the counterparty. When the fund acts as a seller of a credit default swap, it is exposed to, among other things, leverage risk because if an event of default occurs the seller must pay the buyer the full notional value of the reference obligation. Each party to a credit default swap is subject to the credit risk of its counterparty (the risk that its counterparty may be unwilling or unable to perform its obligations on the swap as they come due). The value of the credit default swap to each party will change based on changes in the actual or perceived creditworthiness of the underlying issuer.

A protection buyer may lose its investment and recover nothing should an event of default not occur. The fund may seek to realize gains on its credit default swap positions, or limit losses on its positions, by selling those positions in the secondary market. There can be no assurance that a liquid secondary market will exist at any given time for any particular credit default swap or for credit default swaps generally.

The market for credit default swaps has at times become more volatile as the creditworthiness of certain counterparties has been questioned and/or downgraded. The parties to a credit default swap may be required to post collateral to each other. If the fund posts initial or periodic collateral to its counterparty, it may not be able to recover that collateral from the counterparty in accordance with the terms of the swap. In addition, if the fund receives collateral from its counterparty, it may be delayed or prevented from realizing on the collateral in the event of the insolvency or bankruptcy of the counterparty. The Fund may exit its obligations under a credit default swap only by terminating the contract and paying applicable breakage fees, or by entering into an offsetting credit default swap position, which may cause the Fund to incur more losses.

The fund may also enter into options on swap agreements ("swaptions"). A swaption is a contract that gives a counterparty the right (but not the obligation) to enter into a new swap agreement or to shorten, extend, cancel or otherwise modify an existing swap agreement, at some designated future time on specified terms. The fund may purchase and write (sell) put and call swaptions to the same extent it may make use of standard options on securities or other instruments. Swaptions are generally subject to the same risks involved in the fund's use of options. See "-Options on Securities."

Many swaps are complex and often valued subjectively. Many over-the-counter derivatives are complex and their valuation often requires modeling and judgment, which increases the risk of mispricing or incorrect valuation. The pricing models used may not produce valuations that are consistent with the values the Fund realizes when it closes or sells an over-the-counter derivative. Valuation risk is more pronounced when the Fund enters into over-the-counter derivatives with specialized terms because the market value of those derivatives in some cases is determined in part by reference to similar derivatives with more standardized terms. Incorrect valuations may result in increased cash payment requirements to counterparties, undercollateralization and/or errors in calculation of the Fund's NAV.

Warrants

The fund may invest in or acquire warrants, which are instruments that give the fund the right (but not the obligation) to purchase certain securities from an issuer at a specific price (the "strike price") until a stated expiration date. The purchase of warrants involves the risk that the effective price paid for the warrant added to the strike price of the underlying security may exceed the value of the security's market price, such as when there is no movement in the level of the underlying security. Also, the strike price of warrants typically is much lower than the current market price of the underlying securities, yet they are subject to similar price fluctuations. As a result, warrants may be more volatile investments than the underlying securities and may

offer greater potential for capital appreciation as well as capital loss. Warrants do not entitle a holder to dividends or voting rights with respect to the underlying securities and do not represent any rights in the assets of the issuing company. Also, the value of the warrant does not necessarily change with the value of the underlying securities and a warrant ceases to have value if it is not exercised prior to the expiration date. These factors can make warrants more speculative than other types of investments.

In addition to warrants on securities, the fund may purchase put warrants and call warrants whose values vary depending on the change in the value of one or more specified securities indices (“index warrants”). Index warrants are generally issued by banks or other financial institutions and give the holder the right, at any time during the term of the warrant, to receive upon exercise of the warrant a cash payment from the issuer based on the value of the underlying index at the time of exercise. In general, if the value of the underlying index rises above the exercise price of the index warrant, the holder of a call warrant will be entitled to receive a cash payment from the issuer upon exercise based on the difference between the value of the index and the exercise price of the warrant; if the value of the underlying index falls, the holder of a put warrant will be entitled to receive a cash payment from the issuer upon exercise based on the difference between the exercise price of the warrant and the value of the index. The holder of a warrant would not be entitled to any payments from the issuer at any time when, in the case of a call warrant, the exercise price is greater than the value of the underlying index, or, in the case of a put warrant, the exercise price is less than the value of the underlying index. If the fund were not to exercise an index warrant prior to its expiration, then the fund would lose the amount of the purchase price paid by it for the warrant.

The fund will normally use index warrants in a manner similar to its use of options on securities indices. The risks of the fund’s use of index warrants are generally similar to those relating to its use of index options. Unlike most index options, however, index warrants are issued in limited amounts and are not obligations of a regulated clearing agency, but are backed only by the credit of the bank or other institution which issues the warrant. Also, index warrants generally have longer terms than index options. Index warrants are not likely to be as liquid as certain index options backed by a recognized clearing agency. In addition, the terms of index warrants may limit the fund’s ability to exercise the warrants at such time, or in such quantities, as the fund would otherwise wish to do.

Zero-coupon and Payment-in-kind Bonds

The fund may invest without limit in so-called “zero-coupon” bonds and “payment-in-kind” bonds. Zero-coupon bonds are issued at a significant discount from their principal amount in lieu of paying interest periodically. Payment-in-kind bonds allow the issuer, at its option, to make current interest payments on the bonds either in cash or in additional bonds. Because zero-coupon and payment-in-kind bonds do not pay current interest in cash, their value is subject to greater fluctuation in response to changes in market interest rates than bonds that pay interest currently. Both zero-coupon and payment-in-kind bonds allow an issuer to avoid the need to generate cash to meet current interest payments. Accordingly, such bonds may involve greater credit risks than bonds paying interest currently in cash. The fund is required to accrue interest income on such investments and to distribute such amounts at least annually to shareholders even though such bonds do not pay current interest in cash. Thus, it may be necessary at times for the fund to liquidate investments, including when it is not advantageous to do so, in order to satisfy its distribution requirements under the Code. The market for zero-coupon and payment-in-kind bonds may be limited, making it difficult for the fund to value them or dispose of its holdings quickly at an acceptable price.

TAXES

The following discussion of U.S. federal income tax consequences is based on the Code, existing U.S. Treasury regulations, and other applicable authority, as of the date of this SAI. These authorities are subject to change by legislative or administrative action, possibly with retroactive effect. This discussion does not purport to be complete or to deal with all aspects of federal income taxation of an investment in the fund. The discussion below is generally based on the assumption that the shares of each fund will be respected as owned by insurance company separate accounts. If this is not the case, the person or persons determined to own the fund shares will be currently taxed on fund distributions, and on the proceeds of any redemption of fund shares, under applicable federal income tax rules that may not be described herein. For information concerning the federal income taxation of a variable contract and its holder, refer to the prospectus for the particular contract. Because insurance company separate accounts will be the only shareholders of the fund, only certain tax aspects of an investment in the fund relevant to such shareholders are described herein.

Tax requirements for variable annuity and variable life insurance separate accounts. The fund intends to comply with the separate diversification requirements imposed by Section 817(h) of the Code and the regulations thereunder on certain insurance company separate accounts. These requirements, which are in addition to the diversification requirements imposed on the fund by the 1940 Act and Subchapter M of the Code (discussed below), place certain limitations on assets of each insurance company separate account used to fund variable contracts. Because Section 817(h) and the regulations thereunder treat the assets of a fund owned exclusively by insurance company separate accounts and certain other permitted investors as assets of the related separate account, these regulations are imposed on the assets of the fund. To the extent the fund invests in underlying funds that are themselves owned (including indirectly through other regulated investment companies, such as the fund) exclusively by insurance company separate accounts and certain other permitted investors, the assets of those underlying funds can generally be treated as assets of the separate accounts investing in the fund. Specifically, the regulations provide that, after a one year start-up period or, except as permitted by the “safe harbor” described below, as of the end of each calendar quarter or within 30 days thereafter no more than 55% of the total assets of a separate account may be represented by any one investment, no more than 70% by any two investments, no more than 80% by any three investments, and no more than 90% by any four investments. For this purpose, all securities of the same issuer are generally considered a single investment, and each U.S. government agency and instrumentality is considered a separate issuer. Section 817(h) provides, as a safe harbor, that a separate account will be treated as being adequately diversified if the diversification requirements under Subchapter M are satisfied and no more than 55% of the value of the account’s total assets is attributable to cash and cash items (including receivables), U.S. government securities and securities of other regulated investment companies.

Failure by a fund to satisfy the Section 817(h) requirements, described above, would generally cause the variable contracts to lose their favorable tax status and require a contract holder to include in ordinary income any income accrued under the contracts for the current and all prior taxable years.

Under certain circumstances described in the applicable Treasury regulations, inadvertent failure to satisfy the applicable diversification requirements may be corrected, but such a correction could require a payment to the IRS with respect to the period or periods during which the investments of the account did not meet the diversification requirements. The amount of any such payment could be based on the tax contract holders would have incurred if they were treated as receiving the income on the contract for the period during which the diversification requirements were not satisfied. Any such failure could also result in adverse tax consequences for the insurance company issuing the contracts.

Taxation of the fund. The fund intends to qualify each year as a regulated investment company under Subchapter M of the Code. In order to qualify for the special tax treatment accorded regulated investment companies and their shareholders, the fund must, among other things:

- (a) derive at least 90% of its gross income for each taxable year from (i) dividends, interest, payments with respect to certain securities loans, and gains from the sale or other disposition of stock, securities or foreign currencies, or other income (including but not limited to gains from options, futures, or forward contracts) derived with respect to its business of investing in such stock, securities or currencies, and (ii) net income from interests in “qualified publicly traded partnerships” (as defined below);
- (b) diversify its holdings so that, at the end of each quarter of the fund’s taxable year, (i) at least 50% of the market value of the fund’s total assets is represented by cash and cash items, U.S. government securities, securities of other regulated investment companies, and other securities limited in respect of any one issuer to a value not greater than 5% of the value of the fund’s total assets and not more than 10% of the outstanding voting securities of such issuer, and (ii) not more than 25% of the value of the fund’s total assets is invested, including through corporations in which the fund owns a 20% or more voting stock interest, (x) in the securities (other than those of the U.S. government or other regulated investment companies) of any one issuer or of two or more issuers which the fund controls and which are engaged in the same, similar, or related trades or businesses, or (y) in the securities of one or more qualified publicly traded partnerships (as defined below); and
- (c) distribute with respect to each taxable year at least 90% of the sum of its investment company taxable income (as that term is defined in the Code without regard to the deduction for dividends paid—generally, taxable ordinary income and the excess, if any, of net short-term capital gains over net long-term capital losses) and net tax-exempt interest income, for such year.

In general, for purposes of the 90% gross income requirement described in paragraph (a) above, income derived from a partnership will be treated as qualifying income only to the extent such income is attributable to items of income of the partnership which would be qualifying income if realized by the regulated investment company. However, 100% of the net income of a regulated investment company derived from an interest in a “qualified publicly traded partnership” (defined as a partnership (i) the interests in which are traded on an established securities market or readily tradable on a secondary market or the substantial equivalent thereof, and (ii) that derives less than 90% of its income from the qualifying income described in paragraph (a)(i) above) will be treated as qualifying income. In general, such entities will be treated as partnerships for federal income tax purposes because they meet the passive income requirement

under Code section 7704(c)(2). In addition, although in general the passive loss rules of the Code do not apply to regulated investment companies, such rules do apply to a regulated investment company with respect to items attributable to an interest in a qualified publicly traded partnership.

For purposes of the diversification test in paragraph (b) above, identification of the issuer (or, in some cases, issuers) of a particular fund investment will depend on the terms and conditions of that investment. In some cases, identification of the issuer (or issuers) is uncertain under current law, and an adverse determination or future guidance by the IRS with respect to issuer identification for a particular type of investment may adversely affect the fund's ability to meet the diversification test in paragraph (b) above. Also, for the purposes of the diversification test in paragraph (b) above, the term "outstanding voting securities of such issuer" will include the equity securities of a qualified publicly traded partnership.

If the fund qualifies as a regulated investment company that is accorded special tax treatment, the fund will not be subject to U. S. federal income tax on income or gains distributed in a timely manner to its shareholders in the form of dividends, including distributions of net capital gain (as defined below) that are properly reported by the Fund as capital gain dividends ("Capital Gain Dividends").

If the fund were to fail to meet the income, diversification or distribution test described above, the fund could in some cases cure such failure, including by paying a fund-level tax, paying interest, making additional distributions, or disposing of certain assets. If the fund were ineligible to or otherwise did not cure such failure for any year, or were otherwise to fail to qualify as a regulated investment company accorded special tax treatment in any taxable year, the fund would be subject to tax on its taxable income at corporate rates, and all distributions from earnings and profits, including any distributions of net tax-exempt income and net long-term capital gains, would be taxable to shareholders as ordinary income. In addition, the fund could be required to recognize unrealized gains, pay substantial taxes and interest and make substantial distributions before requalifying as a regulated investment company that is accorded special tax treatment. Furthermore, if the fund failed to qualify as a regulated investment company for any taxable year, such failure could cause an insurance company separate account invested in the fund to fail to satisfy the separate diversification requirements under Section 817(h) of the Code as described above.

The fund intends to distribute at least annually to its shareholders all or substantially all of its investment company taxable income (computed without regard to the dividends-paid deduction) and its net tax-exempt income (if any), and its net capital gain (that is, the excess of net long-term capital gain over net short-term capital loss, in each case determined with reference to any loss carryforwards). Any taxable income including any net capital gain retained by the fund, will be subject to tax at regular corporate rates.

Amounts not distributed on a timely basis by regulated investment companies in accordance with a calendar year distribution requirement are subject to a nondeductible 4% excise tax at the fund level. This excise tax, however, is inapplicable to any regulated investment company whose sole shareholders are either tax-exempt pension trusts, separate accounts of life insurance companies funding variable contracts, certain other permitted tax-exempt investors, or other regulated

investment companies that are also exempt from the excise tax. In determining whether these investors are the sole shareholders of a regulated investment company for purposes of this exception to the excise tax, shares attributable to an investment in the regulated investment company (not exceeding \$250,000) made in connection with the organization of the regulated investment company are not taken into account.

If the fund is subject to the excise tax and it fails to distribute by December 31 of each calendar year at least an amount equal to the sum of 98% of its ordinary income for such year and 98.2% of its capital gain net income for the one-year period ending October 31 of such year, plus any retained amount from the prior year, the fund will be subject to a nondeductible 4% excise tax on the undistributed amounts. For these purposes, ordinary gains and losses from the sale, exchange, or other taxable disposition of property that would otherwise be properly taken into account after October 31 are treated as arising on January 1 of the following calendar year. For purposes of the excise tax, the fund will be treated as having distributed any amount on which it has been subject to corporate income tax in the taxable year ending within the calendar year. A dividend paid to shareholders in January of one year generally is deemed to have been paid by the fund on December 31 of the preceding year, if the dividend was declared and payable to shareholders of record on a date in October, November or December of that preceding year.

Taxation of the shareholders. Pursuant to the requirements of Section 817 of the Code, the shareholders of the fund will be participating insurance companies and their separate accounts that fund variable annuity contracts, variable life insurance policies or other variable insurance contracts (each a “Variable Contract”); other permissible shareholders are qualified pension or retirement plans, qualified tuition programs as described in Section 529 of the Code, or certain qualified Puerto Rican segregated asset accounts. The prospectus that describes the particular Variable Contract discusses the taxation of both separate accounts and the owner of such Variable Contract. Because the shareholders are life insurance segregated asset accounts, they generally will not be subject to income tax currently on taxable dividends received from a fund to the extent such income is applied to increase the values of Variable Contracts.

The IRS has indicated that a degree of investor control over the investment options underlying variable contracts may interfere with the tax-deferred treatment of such contracts. The Treasury Department has issued rulings addressing the circumstances in which a variable contract owner’s control of the investments of the separate account may cause the contract owner, rather than the insurance company, to be treated as the owner of the assets held by the separate account, and is likely to issue additional rulings in the future. If the contract owner is considered the owner of the securities underlying the separate account, income and gains produced by those securities would be included currently in the contract owner’s gross income.

In determining whether an impermissible level of investor control is present, one factor the IRS considers when a separate account invests in one or more regulated investment companies is whether a regulated investment company’s investment strategies are sufficiently broad to prevent a contract holder from being deemed to be making particular investment decisions through its investment in the separate account. Current IRS guidance indicates that typical investment strategies of regulated investment companies, even those with a specific sector or geographical focus, are generally considered sufficiently broad to prevent a contract holder from being deemed to be making particular investment decisions through its investment in a separate

account. For example, the IRS has blessed a separate account offering sub-accounts (each funded through a single regulated investment company) with the following investment strategies: money market, bonds, large company stock, international stock, small company stock, mortgage-backed securities, health care industry, emerging markets, telecommunications, financial services, South American stock, energy, and Asian markets. Based on the rulings and other guidance the Treasury Department has issued to date, Putnam believes that tax-deferred treatment for Variable Contracts funded through investments in the fund will be respected. However, the IRS and the Treasury Department may in the future provide further guidance as to what they deem to constitute an impermissible level of “investor control,” and such guidance could affect the treatment of the fund, including retroactively.

The above discussion addresses only one of several factors that the IRS considers in determining whether a contract holder has an impermissible level of investor control over a separate account. Contract holders should consult their insurance companies, their tax advisers, as well as the prospectus relating to their particular contract for more information concerning this investor control issue.

In the event that additional rules, regulations, or other guidance are adopted, there can be no assurance that the fund will be able to operate as currently described, or that the fund will not have to change its goal or investment policies. A fund may be required to modify its goal and investment policies in order to prevent any such prospective rules, regulations and other guidance from causing variable contract owners to be considered the owners of the shares of the fund.

Taxation of Certain Fund Investments. An investment by the fund in zero-coupon bonds, deferred interest bonds, payment-in-kind bonds, inflation indexed bonds, and certain stripped securities will, and certain securities purchased at a market discount may, cause the fund to recognize income prior to the receipt of cash payments with respect to those securities. If the fund holds the foregoing kinds of securities, or other debt securities subject to special rules under the Code, it may be required to pay out as an income distribution each year an amount which is greater than the total amount of cash interest the Fund actually received. To distribute this income and avoid a tax on the fund, the fund may be required to liquidate portfolio securities that it might otherwise have continued to hold, potentially resulting in additional taxable gain or loss to the fund.

Investments in debt obligations that are at risk of or in default present special tax issues for the funds. Tax rules are not entirely clear about issues such as whether or to what extent a fund should recognize market discount on such a debt obligation, when a fund may cease to accrue interest, original issue discount or market discount, when and to what extent a fund may take deductions for bad debts or worthless securities and how a fund should allocate payments received on obligations in default between principal and income.

These and other related issues will be addressed by a fund when, as and if it invests in such securities, in order to seek to ensure that it distributes sufficient income to preserve its status as a regulated investment company and does not become subject to U.S. federal income or excise tax.

The fund's transactions in derivative instruments (e.g., forward contractors and swap agreements), as well as any of its other hedging, short sale or similar transactions, may be subject to one or more special tax rules (e.g., notional principal contract, straddle, constructive sale, wash sale and short sale rules). The use of these derivatives may affect the amount and timing of distributions to shareholders. Because the tax rules applicable to these types of transactions are in some cases uncertain under current law, an adverse determination or future guidance by the IRS with respect to these rules (which determination or guidance could be retroactive) may affect whether the fund has made sufficient distributions, and otherwise satisfied the relevant requirements, to maintain its qualification as a regulated investment company and avoid a fund-level tax.

The fund's use of commodity-linked derivatives can be limited by the fund's intention to qualify as a regulated investment company, and can bear on its ability to so qualify. Income and gains from certain commodity-linked derivatives do not constitute qualifying income to a regulated investment company for purposes of the 90% gross income test described above. The tax treatment of certain other commodity-linked derivative instruments in which the fund might invest is not certain, in particular with respect to whether income or gains from such instruments constitute qualifying income to a regulated investment company. If the fund were to treat income or gain from a particular instrument as qualifying income and the income or gain were later determined not to constitute qualifying income and, together with any other nonqualifying income, caused the fund's nonqualifying income to exceed 10% of its gross income in any taxable year, the fund would fail to qualify as a regulated investment company unless it is eligible to and does pay a tax at the fund level.

Certain of the fund's investments in derivative instruments and foreign currency-denominated instruments, as well as any of its foreign currency transactions and hedging activities, are likely to produce a difference between its book income and its taxable income. If the fund's book income is less than the sum of its taxable income and net tax-exempt income (if any), the fund could be required to make distributions exceeding book income to qualify as a regulated investment company that is accorded special tax treatment.

The fund may invest in REITs, including REITs that hold residual interests in real estate mortgage investment conduits ("REMICs") (including by investing in residual interests in CMOs with respect to which an election to be treated as a REMIC is in effect). REITs that are themselves taxable mortgage pools ("TMPs") or REITs that invest in TMPs. Under a notice issued by the IRS in the fall of 2006 and Treasury regulations that have not yet been issued, but may apply retroactively, a portion of the fund's income from a REIT that is attributable to the REIT's residual interest in a REMIC or TMP (referred to in the Code as an "excess inclusion") will be subject to federal income tax in all events. This notice also provides, and the regulations are expected to provide, that excess inclusion income of a regulated investment company, such as the fund, will be allocated to shareholders of the regulated investment company in proportion to the dividends received by such shareholders, with the same consequences as if the shareholders held the related REMIC or TMP residual interest directly. As a result, a life insurance company segregated asset account funding a Variable Contract may be taxed currently to the extent of its share of the fund's excess inclusion income as described below.

In general, excess inclusion income allocated to shareholders (i) cannot be offset by net operating losses (subject to a limited exception for certain thrift institutions), (ii) will constitute “unrelated business taxable income” (“UBTI”) to entities (including a qualified pension plan, an individual retirement account, a 401(k) plan, a Keogh plan or other tax-exempt entity) subject to tax on UBTI, thereby potentially requiring such an entity that is allocated excess inclusion income, and otherwise might not be required to file a tax return, to file a tax return and pay tax on such income, and (iii) in the case of a life insurance company separate account funding a Variable Contract, cannot be offset by an adjustment to the reserves and thus is not eligible for tax deferral.

Income, proceeds and gains received by the fund from sources within foreign countries may be subject to withholding and other taxes imposed by such countries; such taxes would reduce the fund’s return on those investments. Tax conventions between certain countries and the United States may reduce or eliminate such taxes.

Special U.S. tax considerations may also apply with respect to foreign investments by the fund. Investments by the fund in certain “passive foreign investment companies” (“PFICs”) could result in a tax on the fund (including interest charges) that cannot be avoided by making distributions to fund shareholders. To avoid the potential for such a tax to apply, the fund may elect to mark to market its investment in a PFIC on the last day of each year. The fund may alternatively elect in certain cases to treat a PFIC as a qualified electing fund, in which case the fund will be required to include annually its share of the income and net capital gains from the PFIC, regardless of whether it receives any distribution from the PFIC. The mark-to-market and qualified electing fund elections may cause the fund to recognize income prior to the receipt of cash payments with respect to its PFIC investments. In order to distribute this income and avoid a tax on the fund, the fund may be required to liquidate portfolio securities that it might otherwise have continued to hold, potentially resulting in additional taxable gain or loss to the fund. Because it is not always possible to identify a foreign corporation as a PFIC, the fund may incur the tax and interest charges described above in some instances.

Certain Shareholder Reporting and Withholding Requirements

Shareholders that are U.S. persons and own, directly or indirectly, more than 50% of the fund could be required to report annually their “financial interest” in the fund’s “foreign financial accounts,” (if any), on Treasury Department FinCEN Form 114, Report of Foreign Bank and Financial Accounts (FBAR). Shareholders should consult their intermediaries through which a fund investment is made (if applicable), as well as their tax advisors to determine the applicability to them of this reporting requirement.

Sections 1471-1474 of the Code and the U.S. Treasury and IRS guidance issued thereunder (collectively, “FATCA”) generally require the fund to obtain information sufficient to identify the status of each of its shareholders under FATCA or under an applicable intergovernmental agreement (an “IGA”) between the United States and a foreign government. If a shareholder fails to provide the requested information or otherwise fails to comply with FATCA or an IGA, the fund may be required to withhold under FATCA at a rate of 30% with respect to that shareholder on ordinary dividends it pays. The IRS and the Department of Treasury have issued proposed regulations providing that these withholding rules will not be applicable to the gross

proceeds of share redemptions or Capital Gain Dividends the fund pays. If a payment by the fund is subject to FATCA withholding, the fund is required to withhold even if such payment would otherwise be exempt from withholding under the rules applicable to foreign shareholders. Each prospective investor is urged to consult its tax adviser regarding the applicability of FATCA and any other withholding or reporting requirements with respect to the prospective investor's own situation, including investments through an intermediary.

General Considerations. This discussion provides only a general overview of the tax implications of investing in the fund. Contract owners are advised to consult the prospectus of their Variable Contracts and their own tax advisors regarding specific questions relating to federal, state and local tax consequences of investing in the fund through such vehicles.

MANAGEMENT

Trustees

Name, Address ¹ , Year of Birth, Position(s) Held with Fund and Length of Service as a Putnam Fund Trustee ²	Principal Occupation(s) During Past 5 Years	Other Directorships Held by Trustee
Liaquat Ahamed (Born 1952), Trustee since 2012	Author; won Pulitzer Prize for <i>Lords of Finance: The Bankers Who Broke the World</i> .	Mr. Ahamed is also a director of the Rohatyn Group, an emerging-market fund complex that manages money for institutions. He is also a director and Treasurer of the Sun Valley Writers Conference (a literary not-for-profit organization), a trustee of the New York Society Library, and a trustee of the Journal of Philosophy. He previously served as a Trustee of the Brookings Institution (a nonprofit public policy organization). Mr. Ahamed has 25 years experience in the management of fixed income portfolios and was previously the Chief Executive Officer of Fischer Francis Trees & Watts, Inc., a fixed-income investment management subsidiary of BNP Paribas. Mr. Ahamed holds a B.A. in economics from Trinity College, Cambridge University and an M.A. in economics from Harvard University.

Name, Address ¹ , Year of Birth, Position(s) Held with Fund and Length of Service as a Putnam Fund Trustee ²	Principal Occupation(s) During Past 5 Years	Other Directorships Held by Trustee
Ravi Akhoury (Born 1947), Trustee since 2009	Private investor. Served as Chairman and CEO of MacKay Shields (a multi-product investment management firm) from 1992 to 2007.	Director of English Helper, Inc. (a private software company). Mr. Akhoury is also a Trustee of the Rubin Museum, serving on the Investment Committee. Mr. Akhoury previously served as Director of Jacob Ballas Capital India (a non-banking finance company focused on private equity advisory services) and a member of its Compensation Committee. He also served as Director and on the Compensation Committee of MaxIndia/New York Life Insurance Company in India and as a director of RAGE Frameworks, Inc. Mr. Akhoury is a former Vice President and Investment Policy Committee member of Fischer, Francis, Trees and Watts (a fixed-income investment management subsidiary of BNP Paribas). He previously served on the Board of Bharti Telecom (an Indian telecommunications company) and was a member of its Audit and Compensation Committees. He also served on the Board of Thompson Press (a publishing company) and was a member of its Audit Committee. Mr. Akhoury graduated from the Indian Institute of Technology with a BS in Engineering and obtained an MS in Quantitative Methods from SUNY at Stony Brook.

Name, Address ¹ , Year of Birth, Position(s) Held with Fund and Length of Service as a Putnam Fund Trustee ²	Principal Occupation(s) During Past 5 Years	Other Directorships Held by Trustee
Barbara M. Baumann (Born 1955), Trustee since 2010	President of Cross Creek Energy Corporation, a strategic consultant to domestic energy firms and direct investor in energy projects.	Director of National Fuel Gas Company (a publicly traded diversified energy company); director of Buckeye Partners, L.P. (a publicly traded master limited partnership focused on pipeline transport, storage and distribution of petroleum products) and Devon Energy Corporation (an independent natural gas and oil exploration and production company). She is the Chair of the Board of Trustees of Mount Holyoke College, and serves on the Finance Committee of the Children's Hospital of Colorado. She is the Treasurer of the Board of The Denver Foundation, and chairs its Finance Committee. She is also a Senior Advisor for First Reserve (an energy private equity firm). Until September 2014, Ms. Baumann was a director of UNS Energy Corporation (a publicly held electric and gas utility in Arizona). Until May 2014, Ms. Baumann was a Director of SM Energy Corporation (a publicly held U.S. exploration and production company). Until May 2012, Ms. Baumann was a Director of CVR Energy, Inc. (a publicly held petroleum refiner and fertilizer manufacturer). Prior to 2003, she was Executive Vice President of Associated Energy Managers, LLC (a domestic private equity firm). From 1981 until 2000 she held a variety of financial and operational management positions with the global energy company Amoco Corporation and its successor, BP. Ms. Baumann holds a B.A. from Mount Holyoke College and an MBA from The Wharton School of the University of Pennsylvania.
Katinka Domotorffy (Born 1975), Trustee since 2012	Voting member of the Investment Committees of the Anne Ray Foundation and Margaret A. Cargill Foundation, part of the Margaret A. Cargill Philanthropies. Prior to 2012, Ms. Domotorffy was Partner, Chief Investment Officer, and Global Head of Quantitative Investment Strategies at Goldman Sachs Asset Management.	Director of the Great Lakes Science Center, and of College Now Greater Cleveland. Ms. Domotorffy holds a BSc in Economics from the University of Pennsylvania and an MSc in Accounting and Finance from the London School of Economics.

Name, Address ¹ , Year of Birth, Position(s) Held with Fund and Length of Service as a Putnam Fund Trustee ²	Principal Occupation(s) During Past 5 Years	Other Directorships Held by Trustee
Catharine Bond Hill (Born 1954), Trustee since 2017	Managing Director of Ithaca S+R (a not-for-profit service that helps the academic community navigate economic and technological change). From 2006 to 2016, Dr. Hill served as the 10th president of Vassar College. Prior to 2006, she was the provost of Williams College.	Director of Yale-NUS College; Alumni Fellow to the Yale Corporation; and a Trustee of Yale University. Dr. Hill graduated from Williams College, earned a bachelor's degree and a master's degree at Brasenose College, Oxford University, and completed her doctorate in economics at Yale University.
Paul L. Joskow (Born 1947), Trustee since 1997	Dr. Joskow is the Elizabeth and James Killian Professor of Economics, Emeritus at the Massachusetts Institute of Technology (MIT), where he joined the faculty in 1972. He was the Head of the MIT Department of Economics from 1994 to 1998 and the Director of the MIT Center for Energy and Environmental Policy Research from 1999 through 2007. Dr. Joskow was the President of the Alfred P. Sloan Foundation (a philanthropic institution focused primarily on research and education on issues related to science, technology and economic performance) from 2008-2017.	Trustee of Yale University; a Director of Exelon Corporation (an energy company focused on power services); and a Member Emeritus of the Board of Advisors of the Boston Symphony Orchestra. Prior to April 2013, he served as Director of TransCanada Corporation and TransCanada Pipelines Ltd. (energy companies focused on natural gas transmission, oil pipelines, and power services.) Prior to August 2007, he served as a Director of National Grid (a U.K.-based holding company with interests in electric and gas transmission and distribution and telecommunications infrastructure). Prior to July 2006, he served as President of the Yale University Council. Prior to February 2005, he served on the board of the Whitehead Institute for Biomedical Research (a non-profit research institution). Prior to February 2002, he was a Director of State Farm Indemnity Company (an automobile insurance company), and prior to March 2000, he was a Director of New England Electric System (a public utility holding company). Dr. Joskow holds a Ph.D. and a M.Phil. from Yale University and a B.A. from Cornell University.

Name, Address ¹ , Year of Birth, Position(s) Held with Fund and Length of Service as a Putnam Fund Trustee ²	Principal Occupation(s) During Past 5 Years	Other Directorships Held by Trustee
Kenneth R. Leibler (Born 1949), Trustee since 2006, Vice Chair from 2016 to 2018 and Chair since 2018	<p>He is currently Vice Chairman Emeritus of the Board of Trustees of Beth Israel Deaconess Hospital in Boston and a former Director of Beth Israel Deaconess Care Organization, an accountable care group jointly owned by the medical center and its affiliated physicians network.</p>	<p>Director of Eversource Corporation, which operates New England's largest energy delivery system. Mr. Leibler is the founder and former Chairman of the Boston Options Exchange (an electronic market place for the trading of listed derivatives securities). Until November 2010, Mr. Leibler was a Director of Ruder Finn Group (a global communications and advertising firm). Prior to December 2006, Mr. Leibler served as a Director of the Optimum Funds Group. Prior to October 2006, he served as a Director of ISO New England (the organization responsible for the operation of the electric generation system in the New England states). Prior to 2000, he was a Director of the Investment Company Institute in Washington, D.C. Prior to January 2005, Mr. Leibler served as Chairman and Chief Executive Officer of the Boston Stock Exchange. Prior to January 2000, he served as President and Chief Executive Officer of Liberty Financial Companies (a publicly traded diversified asset management organization). Prior to June 1990, he served as President and Chief Operating Officer of the American Stock Exchange (AMEX). Prior to serving as AMEX President, he held the position of Chief Financial Officer, and headed its management and marketing operations. Mr. Leibler graduated with a B.A. in Economics from Syracuse University.</p>
Robert E. Patterson (Born 1945), Trustee since 1984	<p>Prior to March 15, 2017, Co-Chairman of Cabot Properties, Inc. (a private equity firm investing in commercial real estate) and Chairman or Co-Chairman of the Investment Committees for various Cabot Funds. He formerly served as Senior Advisor to these entities.</p>	<p>Mr. Patterson is past Chairman and served as a Trustee of the Joslin Diabetes Center. Prior to December 2001, Mr. Patterson served as the President and as a Trustee of Cabot Industrial Trust (a publicly-traded real estate investment trust). He has also served as a Trustee of the Sea Education Association. Prior to 1998, he was Executive Vice President and Director of Acquisitions of Cabot Partners Limited Partnership (a registered investment adviser involved in institutional real estate investments). Prior to 1990, he served as Executive Vice President of Cabot, Cabot & Forbes Realty Advisers, Inc. (the predecessor company of Cabot Partners). Mr. Patterson practiced law and held various positions in state government, and was the founding Executive Director of the Massachusetts Industrial Finance Agency. Mr. Patterson is a graduate of Harvard College and Harvard Law School.</p>

Name, Address¹, Year of Birth, Position(s) Held with Fund and Length of Service as a Putnam Fund Trustee²	Principal Occupation(s) During Past 5 Years	Other Directorships Held by Trustee
George Putnam, III (Born 1951), Trustee since 1984	Chairman of New Generation Research, Inc. (a publisher of financial advisory and other research services) and President of New Generation Advisors, LLC (a registered investment adviser to private funds), which are firms he founded in 1986. Prior to June 2007, Mr. Putnam was President of the Putnam Funds.	Director of The Boston Family Office, LLC (a registered investment advisor) and a Trustee of the Gloucester Marine Genomics Institute. Until June 2019, Mr. Putnam was a Trustee of the Marine Biological Laboratory. Until 2017, Mr. Putnam was a Trustee of Epiphany School. Until 2010, Mr. Putnam was a Trustee of St. Mark's School. Until 2006, Mr. Putnam was a Trustee of Shore Country Day School. Until 2002, he was a Trustee of the Sea Education Association. Mr. Putnam is a graduate of Harvard College, Harvard Business School and Harvard Law School.
Manoj P. Singh (Born 1952), Trustee since 2017	Until 2015, chief operating officer and global managing director at Deloitte Touche Tohmatsu, Ltd. (a global professional services organization), serving on the Deloitte U.S. board of directors and the boards of Deloitte member firms in China, Mexico and Southeast Asia.	Director of Abt Associates (a global research firm working in the fields of health, social and environmental policy, and international development); Trustee of Carnegie Mellon University; Trustee of the Rubin Museum; Director of Pratham USA (an organization dedicated to children's education in India); member of the advisory board of Altimetrik (a business transformation and technology solutions firm); and Director of DXC Technology (a global IT services and consulting company). Mr. Singh holds a bachelor's degree in electrical engineering from the Indian Institute of Technology and an MS in industrial administration from Carnegie Mellon University.
Mona K. Sutphen (Born 1967), Trustee since 2020	Senior Advisor at The Vistria Group, a private investment firm focused on middle-market companies in the healthcare, education, and financial services industries. From 2014 to 2018, Partner at Macro Advisory Partners, a global consulting firm.	Director of Pioneer Natural Resources, a publicly traded company engaged in oil exploration and production in the Permian basin; previous Director of Pattern Energy, a publicly traded renewable energy company; Board Member, International Rescue Committee; Co-Chair of the Board of Human Rights First; Trustee of Mount Holyoke College; and Member of the Advisory Board for the Center on Global Energy Policy at Columbia University's School of International and Public Affairs.

Name, Address¹, Year of Birth, Position(s) Held with Fund and Length of Service as a Putnam Fund Trustee²	Principal Occupation(s) During Past 5 Years	Other Directorships Held by Trustee
Interested Trustees		
*Robert L. Reynolds (Born 1952), Trustee since 2008	President and Chief Executive Officer of Putnam Investments (2008 – Present) and Chairman of Great-West Lifeco U.S. Inc., a holding company that owns Putnam Investments and Great-West Financial (2019 – Present). From 2014 to 2019, President and Chief Executive Officer of Great-West Financial, a financial services company that provides retirement savings plans, life insurance, and annuity and executive benefits products, and of Great-West Lifeco U.S. Inc. Member of Putnam Investments’ and Great-West Financial’s Board of Directors.	Director of several not-for-profit boards, including West Virginia University Foundation, the Concord Museum, Dana-Farber Cancer Institute, Massachusetts Competitive Partnership (Chairman), and Boston Chamber of Commerce. He is a member of the Chief Executives Club of Boston, the National Innovation Initiative, the Massachusetts General Hospital President’s Council, and the Council on Competitiveness, and he is a former President of the Commercial Club of Boston. Prior to 2008, he served as a Director of FMR Corporation, Fidelity Investments Insurance Ltd., Fidelity Investments Canada Ltd., and Fidelity Management Trust Company and as a Trustee of the Fidelity Family of Funds. Mr. Reynolds received a B.S. in Business Administration with a major in Finance from West Virginia University.

¹ The address of each Trustee is 100 Federal Street, Boston, MA 02110. As of December 31, 2019, there were 91 Putnam funds.

² Each Trustee serves for an indefinite term, until his or her resignation, retirement during the year he or she reaches age 75, death or removal.

*Trustee who is an “interested person” (as defined in the 1940 Act) of the fund and Putnam Management. Mr. Reynolds is deemed an “interested person” by virtue of his positions as an officer of the fund and Putnam Management. Mr. Reynolds is the President and Chief Executive Officer of Putnam Investments, LLC and President of your fund and each of the other Putnam funds.

Trustee Qualifications

Each of the fund’s Trustees, with the exception of Dr. Hill and Mr. Singh, was most recently elected by shareholders of the fund during 2014, although most of the Trustees have served on the Board for many years. The Board Policy and Nominating Committee is responsible for recommending proposed nominees for election to the full Board of Trustees for its approval. As part of its deliberative process, the Committee

considers the experience, qualifications, attributes and skills that it determines would benefit the Putnam funds at the time.

In recommending the election of the board members as Trustees, the Committee generally considered the educational, business and professional experience of each Trustee in determining his or her qualifications to serve as a Trustee of the fund, including the Trustee's record of service as a director or trustee of public and private organizations. (This included, but was not limited to, consideration of the specific experience noted in the preceding table.) In the case of most members of the Board, the Committee considered his or her previous service as a member of the Board of Trustees of the Putnam funds, which demonstrated a high level of diligence and commitment to the interests of fund shareholders and an ability to work effectively and collegially with other members of the Board.

The Committee also considered, among other factors, the particular attributes described below with respect to the various individual Trustees and considered the attributes as indicative of the person's ability to deal effectively with the types of financial, regulatory, and/or investment matters that typically arise in the course of a Trustee's work:

Liaquat Ahamed -- Mr. Ahamed's experience as Chief Executive Officer of a major investment management organization and as head of the investment division at the World Bank, as well as his experience as an author of economic literature.

Ravi Akhoury -- Mr. Akhoury's experience as Chairman and Chief Executive Officer of a major investment management organization.

Barbara M. Baumann -- Ms. Baumann's experience in the energy industry as a consultant, an investor, and in both financial and operational management positions at a global energy company, and her service as a director of multiple NYSE companies.

Katinka Domotorffy -- Ms. Domotorffy's experience as Chief Investment Officer and Global Head of Quantitative Investment Strategies at a major asset management organization.

Catharine Bond Hill -- Dr. Hill's education and experience as an economist and as president and provost of colleges in the United States.

Paul L. Joskow -- Dr. Joskow's education and experience as a professional economist familiar with financial economics and related issues and his service on multiple for-profit boards.

Kenneth R. Leibler -- Mr. Leibler's extensive experience in the financial services industry, including as Chief Executive Officer of a major asset management organization, and his service as a director of various public and private companies.

Robert E. Patterson -- Mr. Patterson's training and experience as an attorney and his experience as president of a NYSE company.

George Putnam, III -- Mr. Putnam's training and experience as an attorney, his experience as the founder and Chief Executive Officer of an investment management firm and his experience as an author of various publications on the subject of investments.

Manoj P. Singh -- Mr. Singh's experience as chief operating officer and global managing director of a global professional services organization that provided accounting, consulting, tax, risk management, and financial advisory services.

Mona K. Sutphen — Ms. Sutphen’s extensive experience advising corporate, philanthropic and institutional investors on the intersection of geopolitics, policy and markets, as well as her prior service as White House Deputy Chief of Staff for Policy and as a US Foreign Service Officer, her work advising financial services companies on macro risks, and her service as a director of public companies.

Interested Trustee

Robert L. Reynolds -- Mr. Reynolds’s extensive experience as a senior executive of one of the largest mutual fund organizations in the United States and his current role as President and Chief Executive Officer of Putnam Investments.

On March 23, 2016, Great-West Financial, a company under common control with Putnam Investments, LLC and of which Mr. Reynolds is the Chief Executive Officer, entered into a loan agreement as the lending party with Cabot Industrial Core Fund Operating Partnership, L.P (“Cabot OP”), the guarantor for a collection of six borrowing parties, each being a limited liability company wholly owned by Cabot OP. The loan is intended to provide long-term financing in the form of a 7-year loan totaling \$72.25 million to Cabot Industrial Core Fund, L.P. (the “Cabot Fund”). Cabot OP is an entity through which the Cabot Fund holds certain investments. The interest rate for the loan is 3.48%. Mr. Patterson may be deemed to have had an indirect interest in the transaction, or an indirect relationship with Great-West Financial, through his former position as an officer of Cabot OP and as the former Co-Chairman of the Investment Committee of the Cabot Fund, which approved the proposed loan on behalf of the borrowing parties. Prior to his retirement on March 15, 2017, Mr. Patterson had an 18.3% ownership interest in Cabot Properties, Inc., the highest controlling entity of Cabot OP, and was also a 14.3% partner in Cabot Properties, L.P., the asset manager of the Cabot Fund. Upon his retirement, pursuant to the terms of the governing agreements of Cabot Properties, Inc. and Cabot Properties, L.P., Mr. Patterson ceased to have any rights as a stockholder or partner, except with respect to his right to receive payment.

Officers

In addition to Robert L. Reynolds, the fund’s President, the other officers of the fund are shown below. All of the officers of your fund are employees of Putnam Management or its affiliates or are members of the Trustees’ independent administrative staff.

Name, Address¹, Year of Birth, Position(s) Held with Fund	Length of Service with the Putnam Funds²	Principal Occupation(s) During Past 5 Years and Position(s) with Fund’s Investment Adviser and Distributor³
Jonathan S. Horwitz⁴ (Born 1955) Executive Vice President, Principal Executive Officer, and Compliance Liaison	Since 2004	Executive Vice President, Principal Executive Officer, and Compliance Liaison, The Putnam Funds.
Robert T. Burns (Born 1961) Vice President and Chief Legal Officer	Since 2011	General Counsel, Putnam Investments, Putnam Management and Putnam Retail Management.
James F. Clark³ (Born 1974) Vice President and Chief Compliance Officer	Since 2016	Chief Compliance Officer, Putnam Investments and Putnam Management (2016 – Present). Associate General Counsel, Putnam Investments, Putnam Management and Putnam Retail Management (2003-2015).
Michael J. Higgins⁴ (Born 1976) Vice President, Treasurer, and Clerk	Since 2010	Vice President, Treasurer, and Clerk, The Putnam Funds

Name, Address¹, Year of Birth, Position(s) Held with Fund	Length of Service with the Putnam Funds²	Principal Occupation(s) During Past 5 Years and Position(s) with Fund's Investment Adviser and Distributor³
Richard T. Kircher (Born 1962) Vice President and BSA Compliance Officer	Since 2019	Assistant Director, Operational Compliance, Putnam Investments and Putnam Retail Management (2015 – Present). Sr. Manager, Operational Compliance, Putnam Investments and Putnam Retail Management (2004-2015).
Janet C. Smith (Born 1965) Vice President, Principal Financial Officer, Principal Accounting Officer, and Assistant Treasurer	Since 2007	Head of Fund Administration Services, Putnam Investments and Putnam Management.
Susan G. Malloy (Born 1957) Vice President and Assistant Treasurer	Since 2007	Head of Accounting, Middle Office, and Control Services, Putnam Investments, and Putnam Management.
Mark C. Trenchard (Born 1962) Vice President	Since 2002	Director of Operational Compliance, Putnam Investments and Putnam Retail Management
Nancy E. Florek ⁴ (Born 1957) Vice President, Director of Proxy Voting and Corporate Governance, Assistant Clerk, and Assistant Treasurer	Since 2000	Vice President, Director of Proxy Voting and Corporate Governance, Assistant Clerk, and Assistant Treasurer, The Putnam Funds.
Denere P. Poulack ⁴ (Born 1968) Assistant Vice President, Assistant Clerk, and Assistant Treasurer	Since 2004	Assistant Vice President, Assistant Clerk, and Assistant Treasurer, The Putnam Funds.

¹The address of each Officer is 100 Federal Street, Boston, MA 02110.

²Each officer serves for an indefinite term, until his or her resignation, retirement, death or removal.

³Prior positions and/or officer appointments with the fund or the fund's investment adviser and distributor have been omitted.

⁴Officers of the fund indicated are members of the Trustees' independent administrative staff. Compensation for these individuals is fixed by the Trustees and reimbursed to Putnam Management by the funds.

Except as stated above, the principal occupations of the officers and Trustees for the last five years have been with the employers as shown above, although in some cases they have held different positions with such employers.

Leadership Structure and Standing Committees of the Board of Trustees

For details regarding the number of times the standing committees of the Board of Trustees met during a fund's last fiscal year, see "Trustee responsibilities and fees" in Part I of this SAI.

Board Leadership Structure. Currently, 10 of the 11 Trustees of your fund are Independent Trustees, meaning that they are not considered "interested persons" of your fund or its investment manager. These Independent Trustees must vote separately to approve all financial arrangements and other agreements with your fund's investment manager and other affiliated parties. The role of independent trustees has been

characterized as that of a “watchdog” charged with oversight to protect shareholders’ interests against overreaching and abuse by those who are in a position to control or influence a fund. Your fund’s Independent Trustees meet regularly as a group in executive session (*i.e.*, without representatives of your fund’s investment manager or its affiliates present). An Independent Trustee currently serves as chair of the Board.

Taking into account the number, the diversity and the complexity of the funds overseen by the Board and the aggregate amount of assets under management, your fund’s Trustees have determined that the efficient conduct of the Board’s affairs makes it desirable to delegate responsibility for certain specific matters to committees of the Board. The Executive Committee, Audit, Compliance and Distributions Committee, and Board Policy and Nominating Committee are authorized to take action on certain matters as specified in their charters or in policies and procedures relating to the governance of the funds; with respect to other matters, these committees review and evaluate and make recommendations to the Trustees as they deem appropriate. The other committees also review and evaluate matters specified in their charters and make recommendations to the Trustees as they deem appropriate. Each committee may utilize the resources of your fund’s independent staff, counsel and independent registered public accountants as well as other experts. The committees meet as often as appropriate, either in conjunction with regular meetings of the Trustees or otherwise. The membership and chair of each committee are appointed by the Trustees upon recommendation of the Board Policy and Nominating Committee. Each committee is chaired by an Independent Trustee and, except as noted below, the membership and chairs of each committee consist exclusively of Independent Trustees.

The Trustees have determined that this committee structure also allows the Board to focus more effectively on the oversight of risk as part of its broader oversight of the fund’s affairs. While risk management is the primary responsibility of the fund’s investment manager, the Trustees receive reports regarding investment risks, compliance risks and other risks. The Board and certain committees also meet periodically with the funds’ Chief Compliance Officer to receive compliance reports. In addition, the Board and its Investment Oversight Committees meet periodically with the portfolio managers of the funds to receive reports regarding the management of the funds. The Board’s committee structure allows separate committees to focus on different aspects of these risks and their potential impact on some or all of the funds and to discuss with the fund’s investment manager how it monitors and controls risks.

The Board recognizes that the reports it receives concerning risk management matters are, by their nature, typically summaries of the relevant information. Moreover, the Board recognizes that not all risks that may affect your fund can be identified in advance; that it may not be practical or cost effective to eliminate or to mitigate certain risks; that it may be necessary to bear certain risks (such as investment-related risks) in seeking to achieve your fund’s investment objectives; and that the processes, procedures and controls employed to address certain risks may be limited in their effectiveness. As a result of the foregoing and for other reasons, the Board’s risk management oversight is subject to substantial limitations.

Audit, Compliance and Distributions Committee. The Audit, Compliance and Distributions Committee provides oversight on matters relating to the preparation of the funds’ financial statements, compliance matters, internal audit functions, and Codes of Ethics issues. This oversight is discharged by regularly meeting with management and the funds’ independent registered public accountants and keeping current on industry developments. Duties of this Committee also include the review and evaluation of all matters and relationships pertaining to the funds’ independent registered public accountants, including their independence. The Committee also oversees all dividends and distributions by the funds. The Committee makes recommendations to the Trustees of the funds regarding the amount and timing of distributions paid by the funds, and determines such matters when the Trustees are not in session. The Committee also oversees the policies and procedures pursuant to which Putnam Management prepares recommendations for distributions, and meets regularly with representatives of Putnam Management to review the implementation of these policies and procedures. The Committee reports to the Trustees and makes recommendations to the Trustees regarding these matters. The members of the Committee include only Independent Trustees. Each member of the Committee also is “independent,” as that term is interpreted for purposes of Rule 10A-3(b)(1) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”) and the listing standards of the NYSE.

The Board has adopted a written charter for the Committee, a current copy of which is available at putnam.com/about-putnam. The Committee currently consists of Mses. Baumann (Chairperson) and Domotorffy, Dr. Joskow and Messrs. Akhoury, Patterson and Singh.

Board Policy and Nominating Committee. The Board Policy and Nominating Committee reviews matters pertaining to the operations of the Board of Trustees and its Committees, the compensation of the Trustees and their staff, and the conduct of legal affairs for the funds. The Committee evaluates and recommends all candidates for election as Trustees and recommends the appointment of members and chairs of each board committee. The Committee will consider nominees for Trustee recommended by shareholders of a fund provided that such recommendations are submitted by the date disclosed in the fund's proxy statement and otherwise comply with applicable securities laws, including Rule 14a-8 under the Exchange Act. The Committee also reviews policy matters affecting the operation of the Board and its independent staff. In addition, the Committee oversees the voting of proxies associated with portfolio investments of the funds with the goal of ensuring that these proxies are voted in the best interest of the funds' shareholders. The Committee reports to the Trustees and makes recommendations to the Trustees regarding these matters. The Committee generally believes that the Board benefits from diversity of background, experience and views among its members, and considers this as a factor in evaluating the composition of the Board, but has not adopted any specific policy in this regard. The Committee is composed entirely of Independent Trustees and currently consists of Dr. Joskow (Chairperson), Messrs. Leibler, Patterson and Putnam, and Ms. Baumann.

Brokerage Committee. The Brokerage Committee reviews the funds' policies regarding the execution of portfolio trades and Putnam Management's practices and procedures relating to the implementation of those policies. The Committee reviews periodic reports on the cost and quality of execution of portfolio transactions and the extent to which brokerage commissions have been used (i) by Putnam Management to obtain brokerage and research services generally useful to it in managing the portfolios of the funds and of its other clients, and (ii) by the funds to pay for certain fund expenses. The Committee reports to the Trustees and makes recommendations to the Trustees regarding these matters. The Committee currently consists of Messrs. Ahamed (Chairperson), Leibler and Putnam, Dr. Hill and Ms. Sutphen.

Contract Committee. The Contract Committee reviews and evaluates at least annually all arrangements pertaining to (i) the engagement of Putnam Management and its affiliates to provide services to the funds, (ii) the expenditure of the funds' assets for distribution purposes pursuant to Distribution Plans of the funds, and (iii) the engagement of other persons to provide material services to the funds, including in particular those instances where the cost of services is shared between the funds and Putnam Management and its affiliates or where Putnam Management or its affiliates have a material interest. The Committee also reviews the proposed organization of new fund products, proposed structural changes to existing funds and matters relating to closed-end funds. The Committee reports and makes recommendations to the Trustees regarding these matters. The Committee currently consists of Messrs. Putnam (Chairperson), Ahamed and Leibler, Dr. Hill and Ms. Sutphen.

Executive Committee. The functions of the Executive Committee are twofold. The first is to ensure that the funds' business may be conducted at times when it is not feasible to convene a meeting of the Trustees or for the Trustees to act by written consent. The Committee may exercise any or all of the power and authority of the Trustees when the Trustees are not in session. The second is to review annual and ongoing goals, objectives and priorities for the Board and to facilitate coordination of all efforts between the Trustees and Putnam Management on behalf of the shareholders of the funds. The Committee currently consists of Messrs. Leibler (Chairperson) and Putnam, and Ms. Baumann.

Investment Oversight Committees. The Investment Oversight Committees regularly meet with investment personnel of Putnam Management to review the investment performance and strategies of the funds in light of their stated goals and policies. The Committees seek to identify any compliance issues that are unique to the applicable categories of funds and work with the appropriate board committees to ensure that any such issues are properly addressed. Investment Oversight Committee A currently consists of Mses. Domotorffy

(Chairperson) and Baumann, Messrs. Leibler and Putnam, and Drs. Hill and Joskow. Investment Oversight Committee B currently consists of Messrs. Akhoury (Chairperson), Ahamed, Patterson, Reynolds, and Singh, and Ms. Sutphen.

Pricing Committee. The Pricing Committee oversees the valuation of assets of the Putnam funds and reviews the funds' policies and procedures for achieving accurate and timely pricing of fund shares. The Committee also oversees implementation of these policies, including fair value determinations of individual securities made by Putnam Management or other designated agents of the funds. The Committee also oversees compliance by money market funds with Rule 2a-7 under the 1940 Act and the correction of occasional pricing errors. The Committee also reviews matters related to the liquidity of portfolio holdings. The Committee reports to the Trustees and makes recommendations to the Trustees regarding these matters. The Committee currently consists of Messrs. Singh (Chairperson), Akhoury and Patterson, Dr. Joskow, and Mses. Baumann and Domotorffy.

Indemnification of Trustees

The Agreement and Declaration of Trust of each fund provides that the fund will indemnify its Trustees and officers against liabilities and expenses incurred in connection with litigation in which they may be involved because of their offices with the fund, except if it has been finally adjudicated that (a) they have not acted in good faith, (b) they have not acted in the reasonable belief that their actions were (i) in the best interests of the fund or (ii) at least were not opposed to the best interests of the fund, (c) in the case of a criminal proceeding, they had reasonable cause to believe the action was unlawful or (d) they were liable to the fund or its shareholders by reason of willful misfeasance, bad faith, gross negligence or reckless disregard of his or her duties. The fund, at its expense, provides liability insurance for the benefit of its Trustees and officers.

For details of Trustees' fees paid by the fund and information concerning retirement guidelines for the Trustees, see "Charges and expenses" in Part I of this SAI.

Putnam Management and its Affiliates

Putnam Management is one of America's oldest and largest money management firms. Putnam Management's staff of experienced portfolio managers and research analysts selects securities and constantly supervises the fund's portfolio. By pooling an investor's money with that of other investors, a greater variety of securities can be purchased than would be the case individually; the resulting diversification helps reduce investment risk. Putnam Management has been managing mutual funds since 1937.

Putnam Management is a subsidiary of Putnam Investments. Great-West Lifeco Inc., a financial services holding company with operations in Canada, the United States and Europe and a member of the Power Financial Corporation group of companies, owns a majority interest in Putnam Investments. Power Financial Corporation, a diversified management and holding company with direct and indirect interests in the financial services sector in Canada, the United States and Europe, is a subsidiary of Power Corporation of Canada, a diversified international management and holding company with interests in companies in the financial services, communications and other business sectors. The Desmarais Family Residuary Trust, a trust established pursuant to the Last Will and Testament of the Honourable Paul G. Desmarais, directly and indirectly controls a majority of the voting shares of Power Corporation of Canada.

Trustees and officers of the fund who are also officers of Putnam Management or its affiliates or who are stockholders of Putnam Investments or its parent companies will benefit from the advisory fees, sales commissions, distribution fees and transfer agency fees paid or allowed by the fund.

The Management Contract

Under a Management Contract between the fund and Putnam Management, subject to such policies as the Trustees may determine, Putnam Management, at its expense, furnishes continuously an investment program for the fund and makes investment decisions on behalf of the fund. Subject to the control of the Trustees, Putnam Management also manages, supervises and conducts the other affairs and business of the fund, furnishes office space and equipment, provides bookkeeping and clerical services (including determination of the fund's net asset value, but excluding shareholder accounting services) and places all orders for the purchase and sale of the fund's portfolio securities. Putnam Management may place fund portfolio transactions with broker-dealers that furnish Putnam Management, without cost to it, certain research, statistical and quotation services of value to Putnam Management and its affiliates in advising the fund and other clients. In so doing, Putnam Management may cause the fund to pay greater brokerage commissions than it might otherwise pay.

For details of Putnam Management's compensation under the Management Contract, see "Charges and expenses" in Part I of this SAI. Putnam Management's compensation under the Management Contract may be reduced in any year if the fund's expenses exceed the limits on investment company expenses imposed by any statute or regulatory authority of any jurisdiction in which shares of the fund are qualified for offer or sale. The term "expenses" is defined in the statutes or regulations of such jurisdictions, and generally excludes brokerage commissions, taxes, interest, extraordinary expenses and, if the fund has a distribution plan, payments made under such plan.

Fund-specific expense limitation. Under the Management Contract, Putnam Management may reduce its compensation to the extent that the fund's expenses exceed such lower expense limitation as Putnam Management may, by notice to the fund, declare to be effective. For the purpose of determining any such limitation on Putnam Management's compensation, expenses of the fund shall not reflect the application of commissions or cash management credits that may reduce designated fund expenses. **The terms of any such expense limitation specific to a particular fund are described in the prospectus and/or Part I of this SAI.**

General expense limitation.

Through the expiration of the one-year period following the effective date of the next annual update of each fund's Registration Statement, Putnam Management has contractually agreed to waive fees and/or reimburse expenses of the fund to the extent necessary to limit the cumulative expenses of the fund, exclusive of brokerage, interest, taxes, investment-related expenses (including borrowing costs, *i.e.*, short selling and lines of credit costs), extraordinary expenses, acquired fund fees and expenses, and payments under the fund's investor servicing contract, the fund's investment management contract, and the fund's distribution plans, to an annual (measured on a fiscal year basis) rate of 0.20% of the fund's average net assets.

In addition to the fee paid to Putnam Management, the fund reimburses Putnam Management for the compensation and related expenses of certain officers of the fund and their assistants who provide certain administrative services for the fund and the other Putnam funds, each of which bears an allocated share of the foregoing costs. The aggregate amount of all such payments and reimbursements is determined annually by the Trustees.

The amount of this reimbursement for the fund's most recent fiscal year is included in "Charges and expenses" in Part I of this SAI. Putnam Management pays all other salaries of officers of the fund. The fund pays all expenses not assumed by Putnam Management including, without limitation, auditing, legal, custodial, investor servicing and shareholder reporting expenses. The fund pays the cost of typesetting for its prospectuses and the cost of printing and mailing any prospectuses sent to its shareholders. Putnam Retail Management pays the cost of printing and distributing all other prospectuses.

The Management Contract provides that Putnam Management shall not be subject to any liability to the fund or to any shareholder of the fund for any act or omission in the course of or connected with rendering services to the fund in the absence of willful misfeasance, bad faith, gross negligence or reckless disregard of its duties on the part of Putnam Management.

The Management Contract may be terminated without penalty by vote of the Trustees or the shareholders of the fund, or by Putnam Management, on not less than 60 days' written notice. It may be amended only by a vote of the shareholders of the fund. The Management Contract also terminates without payment of any penalty in the event of its assignment. The Management Contract provides that it will continue in effect only so long as such continuance is approved at least annually by vote of either the Trustees or the shareholders, and, in either case, by a majority of the Trustees who are not "interested persons" of Putnam Management or the fund. In each of the foregoing cases, the vote of the shareholders is the affirmative vote of a "majority of the outstanding voting securities" as defined in the 1940 Act.

Putnam Management has entered into a Master Sub-Accounting Services Agreement with State Street Bank and Trust Company ("State Street"), under which Putnam Management has delegated to State Street responsibility for providing certain administrative, pricing, and bookkeeping services for the fund. Putnam Management pays State Street a fee, monthly, based on a combination of fixed annual charges and charges based on the fund's assets and the number and types of securities held by the fund, and reimburses State Street for certain out-of-pocket expenses.

The Sub-Manager

PIL, a wholly-owned subsidiary of The Putnam Advisory Company, LLC and an affiliate of Putnam Management, has been retained as the sub-manager for a portion of the assets of certain funds as determined by Putnam Management from time to time. PIL is currently authorized to serve as the sub-manager, to the extent determined by Putnam Management from time to time. PIL may serve as sub-manager pursuant to the terms of a sub-management agreement between Putnam Management and PIL. Pursuant to the terms of the sub-management agreement, Putnam Management (and not the fund) pays a quarterly sub-management fee to PIL for its services at the annual rate of 0.35% of the average aggregate net asset value of the portion of Putnam VT Multi-Asset Absolute Return Fund, Putnam VT Small Cap Growth Fund, Putnam VT Equity Income Fund, Putnam VT Global Asset Allocation Fund, Putnam VT Global Equity Fund, Putnam VT Global Health Care Fund, Putnam VT Global Utilities Fund, Putnam VT Growth Opportunities Fund, Putnam VT International Equity Fund, Putnam VT Emerging Markets Equity Fund, Putnam VT International Value Fund, Putnam VT Multi-Cap Core Fund, Putnam VT Sustainable Leaders Fund, Putnam VT Sustainable Future Fund, Putnam VT Research Fund and Putnam VT Small Cap Value Fund, if any, managed by PIL from time to time, and 0.40% of the average aggregate net asset value of the portion of Putnam VT Mortgage Securities Fund, Putnam VT Diversified Income Fund, Putnam VT George Putnam Balanced Fund, Putnam VT High Yield Fund, Putnam VT Income Fund, and Putnam VT Government Money Market Fund:, if any, managed by PIL from time to time.

The sub-management contract provides that PIL shall not be subject to any liability to Putnam Management, the fund or any shareholder of the fund for any act or omission in the course of or connected with rendering services to the fund in the absence of willful misfeasance, bad faith, gross negligence or reckless disregard of its obligations and duties on the part of PIL.

The sub-management contract may be terminated with respect to a fund without penalty by vote of the Trustees or the shareholders of the fund, or by PIL or Putnam Management, on not more than 60 days' nor less than 30 days' written notice. The sub-management contract also terminates without payment of any penalty in the event of its assignment. Subject to applicable law, it may be amended by a majority of the Trustees who are not "interested persons" of Putnam Management or the fund. The sub-management contract provides that it will continue in effect only so long as such continuance is approved at least annually by vote of either the Trustees or the shareholders, and, in either case, by a majority of the Trustees who are not "interested persons"

of Putnam Management or the fund. In each of the foregoing cases, the vote of the shareholders is the affirmative vote of a “majority of the outstanding voting securities” as defined in the 1940 Act.

The Sub-Adviser

If so disclosed in the fund’s prospectus, PAC, an affiliate of Putnam Management, has been retained as a sub-adviser for a portion of the assets of the fund, as determined from time to time by Putnam Management or, with respect to portions of a fund’s assets for which PIL acts as sub-manager as described above, by PIL pursuant to a sub-advisory contract among Putnam Management, PIL and PAC. Under certain terms of the sub-advisory contract, PAC, at its own expense, furnishes continuously an investment program for that portion of each such fund that is allocated to PAC from time to time by Putnam Management or PIL, as applicable and makes investment decisions on behalf of such portion of the fund, subject to the supervision of Putnam Management or PIL, as the case may be. Putnam Management or PIL, as the case may be, may also, at its discretion, request PAC to provide assistance with purchasing and selling securities for the fund, including placement of orders with certain broker-dealers.

PAC, at its expense, furnishes all necessary investment and management facilities, including salaries of personnel, required for it to execute its duties. The sub-advisory contract provides that PAC shall not be subject to any liability to Putnam Management, PIL, the fund or any shareholder of the fund for any act or omission in the course of or connected with rendering services to the fund in the absence of willful misfeasance, bad faith, gross negligence or reckless disregard of its obligations and duties on the part of PAC.

The sub-advisory contract may be terminated with respect to a fund without penalty by vote of the Trustees or the shareholders of the fund, or by PAC, PIL or Putnam Management, on not more than 60 days’ nor less than 30 days’ written notice. The sub-advisory contract also terminates without payment of any penalty in the event of its assignment. Subject to applicable law, it may be amended by a majority of the Trustees who are not “interested persons” of Putnam Management or the fund. The sub-advisory contract provides that it will continue in effect only so long as such continuance is approved at least annually by vote of either the Trustees or the shareholders, and, in either case, by a majority of the Trustees who are not “interested persons” of Putnam Management or the fund. In each of the foregoing cases, the vote of the shareholders is the affirmative vote of a “majority of the outstanding voting securities” as defined in the 1940 Act.

Portfolio Transactions

Potential conflicts of interest in managing multiple accounts.

Putnam Management

Like other investment professionals with multiple clients, the fund’s Portfolio Manager(s) may face certain potential conflicts of interest in connection with managing both the fund and the other accounts listed under “**PORTFOLIO MANAGER(S)**” “**Other accounts managed**” at the same time. The paragraphs below describe some of these potential conflicts, which Putnam Management believes are faced by investment professionals at most major financial firms. As described below, Putnam Management and the Trustees of the Putnam funds have adopted compliance policies and procedures that attempt to address certain of these potential conflicts.

The management of accounts with different advisory fee rates and/or fee structures, including accounts that pay advisory fees based on account performance (“performance fee accounts”), may raise potential conflicts of interest by creating an incentive to favor higher-fee accounts. These potential conflicts may include, among others:

- The most attractive investments could be allocated to higher-fee accounts or performance fee accounts.
- The trading of higher-fee accounts could be favored as to timing and/or execution price. For example, higher-fee accounts could be permitted to sell securities earlier than other accounts when a prompt sale is desirable or to buy securities at an earlier and more opportune time.
- The trading of other accounts could be used to benefit higher-fee accounts (front- running).
- The investment management team could focus their time and efforts primarily on higher-fee accounts due to a personal stake in compensation.

Putnam Management attempts to address these potential conflicts of interest relating to higher-fee accounts through various compliance policies that are generally intended to place all accounts, regardless of fee structure, on the same footing for investment management purposes. For example, under Putnam Management's policies:

- Performance fee accounts must be included in all standard trading and allocation procedures with all other accounts.
- All accounts must be allocated to a specific category of account and trade in parallel with allocations of similar accounts based on the procedures generally applicable to all accounts in those groups (e.g., based on relative risk budgets of accounts).
- All trading must be effected through Putnam's trading desks and normal queues and procedures must be followed (*i.e.*, no special treatment is permitted for performance fee accounts or higher-fee accounts based on account fee structure).
- Front running is strictly prohibited.
- The fund's Portfolio Manager(s) may not be guaranteed or specifically allocated any portion of a performance fee.

As part of these policies, Putnam Management has also implemented trade oversight and review procedures in order to monitor whether particular accounts (including higher-fee accounts or performance fee accounts) are being favored over time.

Potential conflicts of interest may also arise when the Portfolio Manager(s) have personal investments in other accounts that may create an incentive to favor those accounts. As a general matter and subject to limited exceptions, Putnam Management's investment professionals do not have the opportunity to invest in client accounts, other than the Putnam funds. However, in the ordinary course of business, Putnam Management or related persons may from time to time establish "pilot" or "incubator" funds for the purpose of testing proposed investment strategies and products prior to offering them to clients. These pilot accounts may be in the form of registered investment companies, private funds such as partnerships or separate accounts established by Putnam Management or an affiliate. Putnam Management or an affiliate supplies the funding for these accounts. Putnam employees, including the fund's Portfolio Manager(s), may also invest in certain pilot accounts. Putnam Management, and to the extent applicable, the Portfolio Manager(s) will benefit from the favorable investment performance of those funds and accounts. Pilot funds and accounts may, and frequently do, invest in the same securities as the client accounts. Putnam Management's policy is to treat pilot accounts in the same manner as client accounts for purposes of trading allocation – neither favoring nor disfavoring them except as is legally required. For example, pilot accounts are normally included in Putnam Management's daily block trades to the same extent as client accounts (except that pilot accounts do not participate in initial public offerings).

A potential conflict of interest may arise when the fund and other accounts purchase or sell the same securities. On occasions when the Portfolio Manager(s) consider the purchase or sale of a security to be in the best interests of the fund as well as other accounts, Putnam Management's trading desk may, to the extent permitted by applicable laws and regulations and where practicable, aggregate the securities to be sold or purchased in order to obtain the best execution and lower brokerage commissions, if any. Aggregation of trades may create the potential for unfairness to the fund or another account if one account is favored over another in allocating

the securities purchased or sold – for example, by allocating a disproportionate amount of a security that is likely to increase in value to a favored account. Putnam Management’s trade allocation policies generally provide that each day’s transactions in securities that are purchased or sold by multiple accounts are, insofar as possible, averaged as to price and allocated between such accounts (including the fund) in a manner which in Putnam Management’s opinion is equitable to each account and in accordance with the amount being purchased or sold by each account. However, accounts advised or sub-advised by PIL will only place trades at an execution-only commission rate, whereas other Putnam accounts may pay an additional amount for research and other products and services (a “bundled” or “full service” rate). Putnam Management may aggregate trades in PIL accounts with other Putnam accounts that pay a bundled rate as long as all participating accounts pay the same execution rate. To the extent that non-PIL accounts pay a bundled rate, the PIL and other Putnam Management accounts would not be paying the same total commission rate. Certain other exceptions exist for specialty, regional or sector accounts. Trade allocations are reviewed on a periodic basis as part of Putnam Management’s trade oversight procedures in an attempt to ensure fairness over time across accounts.

“Cross trades,” in which one Putnam account sells a particular security to another account (potentially saving transaction costs for both accounts), may also pose a potential conflict of interest. Cross trades may be seen to involve a potential conflict of interest if, for example, one account is permitted to sell a security to another account at a higher price than an independent third party would pay, or if such trades result in more attractive investments being allocated to higher-fee accounts. Putnam Management and the fund’s Trustees have adopted compliance procedures that provide that any transactions between the fund and another Putnam-advised account are to be made at an independent current market price, as required by law.

Another potential conflict of interest may arise based on the different goals and strategies of the fund and other accounts. For example, another account may have a shorter-term investment horizon or different goals, policies or restrictions than the fund. Depending on goals or other factors, the Portfolio Manager(s) may give advice and make decisions for another account that may differ from advice given, or the timing or nature of decisions made, with respect to the fund. In addition, investment decisions are the product of many factors in addition to basic suitability for the particular account involved. Thus, a particular security may be bought or sold for certain accounts even though it could have been bought or sold for other accounts at the same time. More rarely, a particular security may be bought for one or more accounts managed by the Portfolio Manager(s) when one or more other accounts are selling the security (including short sales). There may be circumstances when purchases or sales of portfolio securities for one or more accounts may have an adverse effect on other accounts. As noted above, Putnam Management has implemented trade oversight and review procedures to monitor whether any account is systematically favored over time.

Under federal securities laws, a short sale of a security by another client of Putnam Management or its affiliates (other than another registered investment company) within five business days prior to a public offering of the same securities (the timing of which is generally not known to Putnam in advance) may prohibit the fund from participating in the public offering, which could cause the fund to miss an otherwise favorable investment opportunity or to pay a higher price for the securities in the secondary markets.

The fund’s Portfolio Manager(s) may also face other potential conflicts of interest in managing the fund, and the description above is not a complete description of every conflict that could be deemed to exist in managing both the fund and other accounts. For information on restrictions imposed on personal securities transactions of the fund’s Portfolio Manager(s), please see “Personal Investments by Employees of Putnam Management and Putnam Retail Management and Officers and Trustees of the Fund.”

For information about other funds and accounts managed by the fund’s Portfolio Manager(s), please refer to “Who oversees and manages the fund(s)?” in the prospectus and “**PORTFOLIO MANAGER(S)**” “**Other accounts managed**” in Part I of the SAI.

Brokerage and research services.

Transactions on stock exchanges, commodities markets and futures markets and other agency transactions involve the payment by the fund of negotiated brokerage commissions. Such commissions may vary among different brokers. A particular broker may charge different commissions according to such factors as execution venue and exchange. Although the fund does not typically pay commissions for principal transactions in the over-the-counter markets, such as the markets for most fixed income securities and certain derivatives, an undisclosed amount of profit or “mark-up” is included in the price the fund pays. In underwritten offerings, the price paid by the fund includes a disclosed, fixed commission or discount retained by the underwriter or dealer. **See "Charges and expenses" in Part I of this SAI for information concerning commissions paid by the fund.**

It has for many years been a common practice in the investment advisory business for broker-dealers that execute portfolio transactions for the clients of advisers of investment companies and other institutional investors to provide those advisers with brokerage and research services, as defined in Section 28(e) of the Exchange Act. Consistent with this practice, Putnam Management receives brokerage and research services from broker-dealers with which Putnam Management places the fund's portfolio transactions. The products and services that broker-dealers may provide to Putnam Management's managers and analysts include, among others, trading systems and other brokerage services, economic and political analysis, fundamental and macro investment research, industry and company reviews, statistical information, market data, evaluations of investments, strategies, markets and trading venues, recommendations as to the purchase and sale of investments, performance measurement services and meetings with management of current or prospective portfolio companies or with industry experts. Some of these services are of value to Putnam Management and its affiliates in advising various of their clients (including the fund), although not all of these services are necessarily useful and of value in managing the fund. Research services provided by broker-dealers are supplemental to Putnam Management's own research efforts and relieve Putnam Management of expenses it might otherwise have borne in generating such research. The management fee paid by the fund is not reduced because Putnam Management and its affiliates receive brokerage and research services even though Putnam Management might otherwise be required to purchase some of these services for cash. Putnam Management may also use portfolio transactions to generate “soft dollar” credits to pay for “mixed-use” services (*i.e.*, products or services that may be used both for investment/brokerage- and non-investment/brokerage-related purposes), but in such instances Putnam Management uses its own resources to pay for that portion of the mixed-use product or service that in its good-faith judgment does not relate to investment or brokerage purposes. Putnam Management may also allocate trades to generate soft dollar credits for third-party investment research reports and related fundamental research.

Putnam Management places all orders for the purchase and sale of portfolio investments for the funds, and buys and sells investments for the funds, through a substantial number of brokers and dealers. In selecting broker-dealers to execute the funds' portfolio transactions, Putnam Management uses its best efforts to obtain for each fund the most favorable price and execution reasonably available under the circumstances, except to the extent it may be permitted to pay higher brokerage commissions as described below. In seeking the most favorable price and execution and in considering the overall reasonableness of the brokerage commissions paid, Putnam Management, having in mind the fund's best interests, considers all factors it deems relevant, including, in no particular order of importance, and by way of illustration, the price, size and type of the transaction, the nature of the market for the security or other investment, the amount of the commission, research and brokerage services provided by a broker-dealer (except that research is not a factor in selecting broker-dealers in the case of funds sub-advised by PIL), the timing of the transaction taking into account market prices and trends, the reputation, experience and financial stability of the broker-dealer involved, the benefit of any capital committed by a broker-dealer to facilitate the efficient execution of the transaction and the quality of service rendered by the broker-dealer in other transactions.

Except with respect to research services for funds sub-advised by PIL, Putnam Management may cause the fund to pay a broker-dealer that provides "brokerage and research services" (as defined in the Exchange Act and as described above) to Putnam Management an amount of disclosed commission for effecting securities

transactions on stock exchanges and other transactions for the fund on an agency basis in excess of the commission another broker-dealer would have charged for effecting that transaction. Putnam Management may also instruct an executing broker to “step out” a portion of the trades placed with a broker to other brokers that provide brokerage and research services to Putnam Management. Putnam Management's authority to cause the fund to pay any such greater commissions or to instruct a broker to “step out” a portion of a trade is subject to the requirements of applicable law and such policies as the Trustees may adopt from time to time. It is the position of the staff of the SEC that Section 28(e) of the Exchange Act does not apply to the payment of such greater commissions in "principal" transactions. Accordingly, Putnam Management will use its best effort to obtain the most favorable price and execution available with respect to such transactions, as described above.

PIL may not obtain research using brokerage commissions paid by funds sub-advised by PIL. PIL will use only “hard dollars” (i.e. from its own resources) to acquire external research used by London-based personnel, including fixed income personnel.

The Trustees of the funds have directed Putnam Management, subject to seeking most favorable pricing and execution, to use its best efforts to allocate a portion of overall fund trades to trading programs which generate commission credits to pay fund expenses (other than funds for which PIL serves as sub-adviser) such as shareholder servicing and custody charges. The extent of any commission credits generated for this purpose may vary significantly from time to time and from fund to fund depending on, among other things, the nature of each fund's trading activities and market conditions.

The Management Contract provides that commissions, fees, brokerage or similar payments received by Putnam Management or an affiliate in connection with the purchase and sale of portfolio investments of the fund, less any direct expenses approved by the Trustees, shall be recaptured by the fund through a reduction of the fee payable by the fund under the Management Contract. Putnam Management seeks to recapture for the fund soliciting dealer fees on the tender of the fund's portfolio securities in tender or exchange offers. Any such fees which may be recaptured are likely to be minor in amount.

Principal Underwriter

Putnam Retail Management, located at 100 Federal Street, Boston, MA 02110, is the principal underwriter of shares of the fund and the other continuously offered Putnam funds. Putnam Retail Management is not obligated to sell any specific amount of shares of the fund and will purchase shares for resale only against orders for shares. **See “Charges and expenses” in Part I of this SAI for information on sales charges and other payments received by Putnam Retail Management.**

Personal Investments by Employees of Putnam Management and Putnam Retail Management and Officers and Trustees of the Fund

Employees of Putnam Management, PIL, PAC and Putnam Retail Management and officers and Trustees of the fund are subject to significant restrictions on engaging in personal securities transactions. These restrictions are set forth in the Codes of Ethics adopted by Putnam Management, PIL, PAC and Putnam Retail Management (the “Putnam Investments Code of Ethics and by the fund (the “Putnam Funds Code of Ethics” and each of the Putnam Investments Code of Ethics and the Putnam Funds Code of Ethics, a “Code of Ethics”). Each Code of Ethics, in accordance with Rule 17j-1 under the 1940 Act, contain provisions and requirements designed to identify and address certain conflicts of interest between personal investment activities and the interests of the fund.

The Putnam Investments Code of Ethics does not prohibit personnel from investing in securities that may be purchased or held by the fund. However, the Putnam Investments Code of Ethics, consistent with standards recommended by the Investment Company Institute’s Advisory Group on Personal Investing and requirements established by Rule 17j-1 and rules adopted under the Investment Advisers Act of 1940, among other things,

prohibits personal securities investments without pre-clearance, imposes time periods during which personal transactions may not be made in certain securities by employees with access to investment information, and requires the timely submission of broker confirmations and quarterly reporting of personal securities transactions. Additional restrictions apply to portfolio managers, traders, research analysts and others involved in the investment advisory process.

The Putnam Funds Code of Ethics incorporates and applies the restrictions of the Putnam Investments Code of Ethics to officers and Trustees of the fund who are affiliated with Putnam Investments. The Putnam Funds Code of Ethics does not prohibit unaffiliated officers and Trustees from investing in securities that may be held by the fund; however, the Putnam Funds Code of Ethics regulates the personal securities transactions of unaffiliated Trustees of the fund, including limiting the time periods during which they may personally buy and sell certain securities and requiring them to submit reports of personal securities transactions under certain circumstances.

The fund's Trustees, in compliance with Rule 17j-1, approved each Code of Ethics and are required to approve any material changes to each Code of Ethics. The Trustees also provide continued oversight of personal investment policies and annually evaluate the implementation and effectiveness of each Code of Ethics.

Investor Servicing Agent

Putnam Investments, located at 100 Federal Street, Boston, MA 02110, is the fund's investor servicing agent (transfer, plan and dividend disbursing agent), for which it receives fees that are paid monthly by the fund as an expense of all its shareholders. The fee paid to Putnam Investments, subject to certain limitations, is based on a fund's retail asset level, the number of shareholder accounts in the fund and the level of defined contribution plan assets in the fund. Through at least August 31, 2020, investor servicing fees for the fund will not exceed an annual rate of 0.375% of the fund's average assets.

Custodian

State Street Bank and Trust Company, located at 2 Avenue de Lafayette, Boston, Massachusetts 02111, is the fund's custodian. State Street is responsible for safeguarding and controlling the fund's cash and securities, handling the receipt and delivery of securities, collecting interest and dividends on the fund's investments, serving as the fund's foreign custody manager, providing reports on foreign securities depositaries, making payments covering the expenses of the fund and performing other administrative duties. State Street does not determine the investment policies of the fund or decide which securities the fund will buy or sell. State Street has a lien on the fund's assets to secure charges and advances made by it. The fund may from time to time enter into brokerage arrangements that reduce or recapture fund expenses, including custody expenses. The fund also has an offset arrangement that may reduce the fund's custody fee based on the amount of cash maintained by its custodian.

Counsel to the Fund and the Independent Trustees

Ropes & Gray LLP serves as counsel to the fund and the Independent Trustees, and is located at Prudential Tower, 800 Boylston Street, Boston, Massachusetts 02199.

DETERMINATION OF NET ASSET VALUE

The fund determines the net asset value per share of each class of shares once each day the NYSE is open. Currently, the NYSE is closed Saturdays, Sundays and the following holidays: New Year's Day, Rev. Dr. Martin Luther King, Jr. Day, Presidents' Day, Good Friday, Memorial Day, the Fourth of July, Labor Day, Thanksgiving Day and Christmas Day. The fund determines net asset value as of the scheduled close of regular trading on the NYSE, normally 4:00 p.m. Eastern Time. The net asset value per share of each class equals the total value of its assets, less its liabilities, divided by the number of its outstanding shares.

Assets of money market funds are valued at amortized cost pursuant to Rule 2a-7 under the 1940 Act. For other funds, securities and other assets ("Securities") for which market quotations are readily available are valued at prices which, in the opinion of Putnam Management, most nearly represent the market values of such Securities. Currently, prices for these Securities are determined using the last reported sale price (or official closing price for Securities listed on certain markets) or, if no sales are reported (as in the case of some Securities traded over-the-counter), the last reported bid price, except that certain Securities are valued at the mean between the last reported bid and ask prices. All other Securities are valued by Putnam Management or other parties at their fair value following procedures approved by the Trustees.

Reliable market quotations are not considered to be readily available for, among other Securities, long-term corporate bonds and notes, certain preferred stocks, tax-exempt securities, and certain foreign securities. These investments are valued at fair value, generally on the basis of valuations furnished by approved pricing services, which determine valuations for normal, institutional-size trading units of such securities using methods based on market transactions for comparable securities and various relationships between securities that are generally recognized by institutional traders. Other Securities, such as various types of options, are valued at fair value on the basis of valuations furnished by broker-dealers or other market intermediaries.

Putnam Management values all other Securities at fair value using its internal resources. The valuation procedures applied in any specific instance are likely to vary from case to case. However, consideration is generally given to the financial position of the issuer and other fundamental analytical data relating to the investment and to the nature of the restrictions on disposition of the Securities (including any registration expenses that might be borne by the fund in connection with such disposition). In addition, specific factors are also generally considered, such as the cost of the investment, the market value of any unrestricted Securities of the same class, the size of the holding, the prices of any recent transactions or offers with respect to such Securities and any available analysts' reports regarding the issuer. In the case of Securities that are restricted as to resale, Putnam Management determines fair value based on the inherent worth of the Security without regard to the restrictive feature, adjusted for any diminution in value resulting from the restrictive feature.

Generally, trading in certain Securities (such as foreign securities) is substantially completed each day at various times before the close of the NYSE. The closing prices for these Securities in markets or on exchanges outside the U.S. that close before the close of the NYSE may not fully reflect events that occur after such close but before the close of the NYSE. As a result, the fund has adopted fair value pricing procedures, which, among other things, require the fund to fair value foreign equity securities if there has been a movement in the U.S. market that exceeds a specified threshold. Although the threshold may be revised from time to time and the number of days on which fair value prices will be used will vary, it is possible that fair value prices will be used by the fund to a significant extent. In addition, Securities held by some of the funds may be traded in foreign markets that are open for business on days that the fund is not, and the trading of such Securities on those days may have an impact on the value of a shareholder's investment at a time when the shareholder cannot buy and sell shares of the fund.

Currency exchange rates used in valuing Securities are normally determined as of 4:00 p.m. Eastern Time.

Occasionally, events affecting such exchange rates may occur between the time of the determination of exchange rates and the close of the NYSE, which, in the absence of fair valuation, would not be reflected in the computation of the fund's net asset value. If events materially affecting the currency exchange rates occur during such period, then the exchange rates used in valuing affected Securities will be valued by Putnam Management at their fair value following procedures approved by the Trustees.

In addition, because of the amount of time required to collect and process trading information as to large numbers of securities issues, the values of certain Securities (such as convertible bonds, U.S. government securities and tax-exempt securities) are determined based on market quotations collected before the close of the NYSE. Occasionally, events affecting the value of such Securities may occur between the time of the determination of value and the close of the NYSE, which, in the absence of fair value prices, would not be reflected in the computation of the fund's net asset value. If events materially affecting the value of such Securities occur during such period, then these Securities will be valued by Putnam Management at their fair value following procedures approved by the Trustees. It is expected that any such instance would be very rare.

The fair value of Securities is generally determined as the amount that the fund could reasonably expect to realize from an orderly disposition of such Securities over a reasonable period of time. By its nature, a fair value price is a good faith estimate of the value of a Security at a given point in time and does not reflect an actual market price.

The fund may also value its Securities at fair value under other circumstances pursuant to procedures approved by the Trustees.

Money Market Funds

"Retail money market funds" and "government money market funds" each as defined by Rule 2a-7 under the 1940 Act generally value their portfolio securities at amortized cost according to Rule 2a-7 under the 1940 Act.

Since the net income of a money market fund is declared as a dividend each time it is determined, the net asset value per share of a retail money market fund and government money market fund typically remains at \$1.00 per share immediately after such determination and dividend declaration. Any increase in the value of a shareholder's investment in a money market fund representing the reinvestment of dividend income is reflected by an increase in the number of shares of that fund in the shareholder's account on the last business day of each month. It is expected that a money market fund's net income will normally be positive each time it is determined. However, if because of realized losses on sales of portfolio investments, a sudden rise in interest rates, or for any other reason the net income of a fund determined at any time is a negative amount, a money market fund may offset such amount allocable to each then shareholder's account from dividends accrued during the month with respect to such account. If, at the time of payment of a dividend, such negative amount exceeds a shareholder's accrued dividends, a money market fund may reduce the number of outstanding shares by treating the shareholder as having contributed to the capital of the fund that number of full and fractional shares which represent the amount of the excess. Each shareholder is deemed to have agreed to such contribution in these circumstances by his or her investment in a money market fund.

ADDITIONAL PAYMENTS

In addition to the ongoing payments described under "Distribution Plan," Putnam Retail Management and its affiliates also pay additional compensation to selected insurance companies (or affiliated broker-dealers) to whom shares of the funds are offered ("Record Owners") and to dealers that sell variable insurance products ("dealers") as described below. These payments may create an incentive for a Record Owner firm, dealer firm or their representatives to recommend or offer shares of the fund or other Putnam funds, or insurance products for which the funds serve as underlying investments, to its customers. These additional payments are made pursuant to agreements with Record Owners and dealers and do not change the price paid by investors for the purchase of a share or the amount a fund will receive as proceeds from such sales or the distribution (12b-1) fees and other expenses paid by the fund, as shown under the heading *Fees and Expenses* in the prospectus.

Marketing and/or Administrative Services Support Payments

Putnam Retail Management and its affiliates will make payments to certain Record Owners and dealers for their marketing and/or administrative support services, including business planning assistance, educating dealer personnel about the funds and shareholder financial planning needs, placement on the dealer's preferred or recommended fund list, access to sales meetings, sales representatives and management representatives of the dealer and administrative services performed by the Record Owner or dealer. These payments are generally based on one or more of the following factors: average assets of a fund attributable to that dealer, gross or net sales of the funds attributable to that dealer or a negotiated lump sum payment for services rendered. Putnam Retail Management and its affiliates compensate Record Owners and dealers differently depending upon, among other factors, the level and/or type of marketing and/or administrative support servicing provided by the Record Owner or dealer.

Marketing and/or administrative support payments to any one Record Owner or dealer are not expected, with certain limited exceptions, to exceed 0.25% of the average assets of the funds attributable to that Record Owner or dealer on an annual basis.

[The following Record Owners and dealers (and such Record Owner's and dealer's affiliates) received marketing and/or administrative support payments from Putnam Retail Management and its affiliates during calendar year ended December 31, 2019:

Ameritas Life Insurance Corp.	Jefferson National Life Insurance Company of New York
Allstate Life Insurance Company	Lincoln National Life Insurance Company
Allstate Life Insurance Company of New York	Lincoln Life & Annuity Company of New York
American General Life Insurance Company	MEMBERS Life Insurance Company
Avantax Investment Services, Inc.	Minnesota Life Insurance Company
AXA Equitable Life Insurance Company	Nationwide Financial Services Inc.
Brightouse Life Insurance Company	Principal Life Insurance Company
Brighthouse Life Insurance Company of New York	Principal National Life Insurance Company
CMFG Life Insurance Company	Riversource Life Insurance Company
Delaware Life Insurance Company	Riversource Life Insurance Company of New York
Delaware Life Insurance Company of New York	Royal Alliance Associates
Forethought Distributors, LLC	SagePoint Financial, Inc.
Forethought Life Insurance Company	Security Benefit Life Insurance Company
First Security Benefit Life Insurance and Annuity Company of New York	Talcott Resolution Life Insurance Company
FSC Securities Corporation	Talcott Resolution Life and Annuity Insurance company
Great-West Life & Annuity Insurance Company	The Guardian Insurance & Annuity Company, Inc.
Great-West Life & Annuity Insurance Company of New York	The United States Life Insurance Company in the City of New York
Jefferson National Life Insurance Company	Voya Insurance and Annuity Company

Additional Record Owners and dealers may receive marketing and/or administrative support payments in 2020 and in future years. Any additions, modifications or deletions to the list of Record Owners and dealers identified above that have occurred since December 31, 2019 are not

reflected. You can ask your Record Owner or dealer about any payments it receives from Putnam Retail Management and its affiliates.]

Other Payments

From time to time, Putnam Retail Management, at its expense, may provide additional compensation to Record Owners or dealers which sell or arrange for the sale of shares of the fund or variable insurance products to the extent not prohibited by laws or the rules of any self-regulatory agency, such as FINRA. Such compensation provided by Putnam Retail Management may include financial assistance to Record Owners or dealers that enable Putnam Retail Management to participate in and/or present at Record Owner or dealer-sponsored educational conferences or seminars, sales or training programs for invited registered representatives and other Record Owner or dealer employees, Record Owner or dealer entertainment, and other Record Owner or dealer-sponsored events, and travel expenses, including lodging incurred by registered representatives and other employees in connection with prospecting, retention and due diligence trips. Putnam Retail Management makes payments for entertainment events it deems appropriate, subject to Putnam Retail Management's internal guidelines and applicable law. These payments may vary upon the nature of the event.

Putnam Investor Services makes payments to certain dealers that distribute the insurance products for which the funds serve as underlying funding vehicles for subaccounting and similar recordkeeping services provided to shareholders of other Putnam funds.

You can ask your Record Owner or dealer for information about payments it receives from Putnam Retail Management and its affiliates and the services it provides for those payments.

REDEMPTIONS

Suspension of redemptions. The fund may not suspend shareholders' right of redemption, or postpone payment for more than seven days, unless the Exchange is closed for other than customary weekends or holidays, or if permitted by the rules of the SEC during periods when trading on the Exchange is restricted or during any emergency which makes it impracticable for the fund to dispose of its securities or to determine fairly the value of its net assets, or during any other period permitted by order of the Commission for protection of investors.

In-kind redemptions. To the extent consistent with applicable laws and regulations, the fund will consider satisfying all or a portion of a redemption request by distributing securities or other property in lieu of cash ("in-kind" redemptions). Any transaction costs or other expenses involved in liquidating securities received in an in-kind redemption will be borne by the redeeming investor. For information regarding procedures for in-kind redemptions, please contact Putnam Retail Management.

POLICY ON EXCESSIVE SHORT-TERM TRADING

As disclosed in the prospectus of each fund of the Trust other than Putnam VT Government Money Market Fund, Putnam Management and the Trust's Trustees have adopted policies and

procedures intended to discourage excessive short-term trading. The fund seeks to discourage excessive short-term trading by using fair value pricing procedures to value investments under some circumstances. In addition, Putnam Management monitors aggregate cash flows in each insurance company separate account that invests in the fund. If high cash flows relative to the size of the account or other information indicate that excessive short-term trading may be taking place in a particular separate account, Putnam Management will contact the insurance company that maintains accounts for the underlying contract holders and seek to have the insurance company enforce the separate account's policies on excessive short-term trading. Each insurance company's policies on excessive short-term trading will vary, and some insurance companies may not have adopted specific policies on excessive short-term trading. To the extent that short-term trading activity continues, additional measures may be taken. Putnam Management's practices for measuring excessive short-term trading activity and issuing warnings may change from time to time. These additional measures may include account monitoring (in instances where trading records of individual contract holders are available) and account restrictions, including the right to reject or restrict transfers for any reason.

SHAREHOLDER LIABILITY

Under Massachusetts law, shareholders could, under certain circumstances, be held personally liable for the obligations of the fund. However, the Agreement and Declaration of Trust disclaims shareholder liability for acts or obligations of the fund and requires that notice of such disclaimer be given in each agreement, obligation, or instrument entered into or executed by the fund or the Trustees. The Agreement and Declaration of Trust provides for indemnification out of fund property for all loss and expense of any shareholder held personally liable for the obligations of the fund. Thus, the risk of a shareholder incurring financial loss on account of shareholder liability is limited to circumstances in which the fund would be unable to meet its obligations. The likelihood of such circumstances appears to be remote.

DISCLOSURE OF PORTFOLIO INFORMATION

The Trustees of the Putnam funds have adopted policies with respect to the disclosure of the fund's portfolio holdings by the fund, Putnam Management, or their affiliates. These policies provide that information about the fund's portfolio generally may not be released to any party prior to (i) the day after the posting of such information on the Putnam Investments website, (ii) the filing of the information with the SEC in a required filing, or (iii) the dissemination of such information to all shareholders simultaneously. Certain limited exceptions pursuant to the fund's policies are described below. In addition, these policies do not apply to the sharing of fund portfolio holdings information with Putnam Investment personnel involved in the management of other Putnam funds that invest in such fund. The Trustees will periodically receive reports from the fund's Chief Compliance Officer regarding the operation of these policies and procedures, including any arrangements to make non-public disclosures of the fund's portfolio information to third parties. Putnam Management and its affiliates are not permitted to receive compensation or other consideration in connection with disclosing information about the fund's portfolio holdings to third parties.

Public Disclosures

The fund's portfolio holdings are currently disclosed to the public through filings with the SEC and postings on the Putnam Investments website. The fund files its portfolio holdings with the SEC twice each year on Form N-CSR (with respect to each annual period and semi-annual period). In addition, money market funds file reports of portfolio holdings on Form N-MFP each month (with respect to the prior month), and funds other than money market funds file reports of portfolio holdings on Form N-PORT 60 days after each fiscal quarter (for the respective fiscal quarter), with the schedule of portfolio holdings filed on Form N-PORT for the third month of the first and third fiscal quarter made publicly available. Shareholders may obtain the Form N-CSR and N-MFP filings and the publicly available portions of Form N-PORT filings on the SEC's website at <http://www.sec.gov>. Form N-CSR filings are available upon filing, Form N-MFP filings are available 60 days after each calendar month end, and information reported on Form N-PORT filings for the third month of a fiscal quarter is available 60 days after the end of the fiscal quarter. You may call the SEC at 1-800-SEC-0330 for information about the SEC's website.

For Putnam VT Government Money Market Fund, the following information is publicly available on the Putnam Investments website, putnam.com/individual, as disclosed in the following table. This information will remain available on the website for six months thereafter, after which the information can be found on the SEC's website at <http://www.sec.gov>.

Information	Frequency of Disclosure	Date of Web Posting
Full Portfolio Holdings	Monthly	No later than 5 business days after the end of each month.
Top 10 Portfolio Holdings and other portfolio statistics	Monthly	Approximately 15 days after the end of each month

For Putnam VT Diversified Income Fund, Putnam VT Global Asset Allocation Fund, Putnam VT High Yield Fund, Putnam VT Income Fund, Putnam VT Mortgage Securities Fund, and Putnam VT Multi-Asset Absolute Return Fund, Putnam Management makes each fund's portfolio information publicly available on the Putnam Investments website, putnam.com/individual, as disclosed in the following table.

Information	Frequency of Disclosure	Date of Web Posting
Full Portfolio Holdings	Monthly	8 business days after the end of each month.
Top 10 Portfolio Holdings and other portfolio statistics	Monthly	Approximately 15 days after the end of each month.

For all other funds, Putnam Management also currently makes the fund's portfolio information publicly available on the Putnam Investments website, putnam.com/individual, as disclosed in the following table.

Information	Frequency of Disclosure	Date of Web Posting
Full Portfolio Holdings	Quarterly	8 business days after the end of each calendar quarter.
Top 10 Portfolio Holdings and other portfolio statistics	Monthly	Approximately 15 days after the end of each month.

The scope of the information relating to the fund’s portfolio that is made available on the website may change from time to time without notice. In addition, the posting of fund holdings may be delayed in some instances for technical reasons.

Putnam Management or its affiliates may include fund portfolio information that has already been made public through a Web posting or SEC filing in marketing literature and other communications to shareholders, advisors or other parties, provided that, in the case of information made public through the Web, the information is disclosed no earlier than the day after the date of posting to the website.

Other Disclosures

In order to address potential conflicts between the interest of fund shareholders, on the one hand, and those of Putnam Management, Putnam Retail Management or any affiliated person of those entities or of the fund, on the other hand, the fund’s policies require that non-public disclosures of information regarding the fund’s portfolio may be made only if there is a legitimate business purpose consistent with fiduciary duties to all shareholders of the fund. In addition, the party receiving the non-public information must sign a non-disclosure agreement unless otherwise approved by the Chief Compliance Officer of the fund. Arrangements to make non-public disclosures of the fund’s portfolio information must be approved by the Chief Compliance Officer of the fund. The Chief Compliance Officer will report on an ongoing basis to a committee of the fund’s Board of Trustees consisting only of Trustees who are not “interested persons” of the fund or Putnam Management regarding any such arrangement that the fund may enter into with third parties other than service providers to the fund.

The fund periodically discloses its portfolio information on a confidential basis to various service providers that require such information in order to assist the fund with its day-to-day business affairs. In addition to Putnam Management and its affiliates, including Putnam Investor Services and PRM, these service providers include the fund’s custodian (State Street Bank and Trust Company) and any sub-custodians (including one or more sub-custodians for each non-U.S. market in which the fund purchases securities), accounting providers (State Street Bank and Trust Company, SS&C Advent and BNY Mellon), pricing services (including IDC, Reuters, Markit, Statpro, Standard & Poors, Bloomberg, ICE ClearCredit, LCH Swapclear, PriceServ and CME Group), independent registered public accounting firm (KPMG LLP or PricewaterhouseCoopers LLP), legal counsel (Ropes & Gray LLP and, for funds sold in Japan, Mori Hamada & Matsumoto), financial printer and filing agent (McMunn Associates, Inc., Newsfile Corp.), proxy voting service (Glass, Lewis & Co), compliance limit monitoring

(Consensys Limited) and securities lending agent (Goldman Sachs Bank USA). These service providers are required to keep such information confidential, and are prohibited from trading based on the information or otherwise using the information except as necessary in providing services to the fund.

The fund may also periodically provide non-public information about its portfolio holdings to rating and ranking organizations and other providers of industry data, such as Lipper Inc., Morningstar Inc., Bloomberg and Thomson Reuters, in connection with those firms' research on and classification of the fund and in order to gather information about how the fund's attributes (such as volatility, turnover, and expenses) compare with those of peer funds. The fund may also periodically provide non-public information about its portfolio holdings to consultants that provide portfolio analysis services or other investment research or trading analytics. Such recipients of portfolio holdings include Barclays, Factset, ITG, Trade Infomatics, ConsenSys, ENSO Financial Analytics, Bloomberg and Credit Suisse. Any such rating, ranking, or consulting or other firm would be required to keep the fund's portfolio information confidential and would be prohibited from trading based on the information or otherwise using the information except as necessary in providing services to the fund. Such firms may receive portfolio holdings information only from certain funds (such as equity funds or fixed income funds) and such information may be provided in greater or lesser detail depending on the nature of the services provided by the relevant firm.

INFORMATION SECURITY RISKS

Cyber security risk. With the increased use of interconnected technologies such as the Internet and the dependence on computer systems to perform necessary business functions, investment companies such as the fund and its service providers may be prone to operational, information security and related risks resulting from third-party cyber-attacks and/or other technological malfunctions. Cyber-attacks may include stealing or corrupting data maintained online or digitally, preventing legitimate users from accessing information or services on a website, releasing confidential information without authorization, and causing operational disruption. Successful cyber-attacks against, or security or technology breakdowns of, the fund or its adviser, custodian, transfer agent, or other affiliated or third-party service providers may adversely affect the fund and its shareholders. For example, cyber-attacks may interfere with the processing of shareholder transactions, impact the fund's ability to calculate its net asset value, cause the release of private shareholder information or confidential fund information, impede trading, cause reputational damage, and subject the fund or others to regulatory fines, penalties or financial losses, reimbursement or other compensation costs, and additional compliance costs. Similar types of cyber security risks also are present for issuers of securities in which the fund invests, which could result in material adverse consequences for such issuers, and may cause the fund's investment in such securities to lose value. The fund and Putnam Investments may have limited ability to prevent or mitigate cyber-attacks or security or technology breakdowns affecting the fund's third-party service providers. While Putnam has established business continuity plans and systems designed to prevent or reduce the impact of cyber-attacks, such plans and systems are subject to inherent limitations.

PROXY VOTING GUIDELINES AND PROCEDURES

The Trustees of the Putnam funds have established proxy voting guidelines and procedures that govern the voting of proxies for the securities held in the funds' portfolios. The proxy voting guidelines summarize the funds' positions on various issues of concern to investors, and provide direction to the proxy voting service used by the funds as to how fund portfolio securities should be voted on proposals dealing with particular issues. The proxy voting procedures explain the role of the Trustees, Putnam Management, the proxy voting service and the funds' proxy manager in the proxy voting process, describe the procedures for referring matters involving investment considerations to the investment personnel of Putnam Management and describe the procedures for handling potential conflicts of interest. The Putnam funds' proxy voting guidelines and procedures are included in this SAI as Appendix A. Information regarding how the funds voted proxies relating to portfolio securities during the 12-month period ended June 30, 2019 is available on the Putnam Individual Investor website, www.putnam.com/individual, and on the SEC's website at www.sec.gov. If you have questions about finding forms on the SEC's website, you may call the SEC at 1-800-SEC-0330. You may also obtain the Putnam funds' proxy voting guidelines and procedures by calling Putnam's Shareholder Services at 1-800-225-1581.

SECURITIES RATINGS

The ratings of securities in which the fund may invest will be measured at the time of purchase and, to the extent a security is assigned a different rating by one or more of the various rating agencies, Putnam Management may use the highest rating assigned by any agency. Putnam Management will not necessarily sell an investment if its rating is reduced. Below are descriptions of ratings, as provided by the rating agencies, which represent opinions as to the quality of various debt instruments.

Moody's Investors Service, Inc.

Global Long-Term Rating Scale (original maturity of 1 year or more)

Aaa – Obligations rated Aaa are judged to be of the highest quality, subject to the lowest level of credit risk.

Aa – Obligations rated Aa are judged to be of high quality and are subject to very low credit risk.

A – Obligations rated A are judged to be upper-medium grade and are subject to low credit risk.

Baa – Obligations rated Baa are judged to be medium-grade and subject to moderate credit risk and as such may possess certain speculative characteristics.

Ba – Obligations rated Ba are judged to be speculative and are subject to substantial credit risk.

B – Obligations rated B are considered speculative and are subject to high credit risk.

Caa – Obligations rated Caa are judged to be speculative of poor standing and are subject to very high credit risk.

Ca – Obligations rated Ca are highly speculative and are likely in, or very near, default, with some prospect of recovery of principal and interest.

C – Obligations rated C are the lowest rated and are typically in default, with little prospect for recovery of principal or interest.

Note: Moody's appends numerical modifiers 1, 2, and 3 to each generic rating classification from Aa through Caa. The modifier 1 indicates that the obligation ranks in the higher end of its generic rating category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking in the lower end of that generic rating category. Additionally, a "(hyb)" indicator is appended to all ratings of hybrid securities issued by banks, insurers, finance companies, and securities firms.

By their terms, hybrid securities allow for the omission of scheduled dividends, interest, or principal payments, which can potentially result in impairment if such an omission occurs. Hybrid securities may also be subject to contractually allowable write-downs of principal that could result in impairment. Together with the hybrid indicator, the long-term obligation rating assigned to a hybrid security is an expression of the relative credit risk associated with that security.

Global Short-Term Rating Scale (original maturity of 13 months or less)

P-1 – Issuers (or supporting institutions) rated Prime-1 have a superior ability to repay short-term debt obligations.

P-2 – Issuers (or supporting institutions) rated Prime-2 have a strong ability to repay short-term debt obligations.

P-3 – Issuers (or supporting institutions) rated Prime-3 have an acceptable ability to repay short-term obligations.

NP – Issuers (or supporting institutions) rated Not Prime do not fall within any of the Prime rating categories.

US Municipal Short-Term Obligation Ratings

MIG 1 – This designation denotes superior credit quality. Excellent protection is afforded by established cash flows, highly reliable liquidity support, or demonstrated broad-based access to the market for refinancing.

MIG 2 – This designation denotes strong credit quality. Margins of protection are ample, although not as large as in the preceding group.

MIG 3 – This designation denotes acceptable credit quality. Liquidity and cash-flow protection may be narrow, and market access for refinancing is likely to be less well-established.

SG – This designation denotes speculative grade credit quality. Debt instruments in this category may lack sufficient margins of protection.

US Municipal Demand Obligation Ratings

VMIG 1 – This designation denotes superior credit quality. Excellent protection is afforded by the superior short-term credit strength of the liquidity provider and structural and legal protections that ensure the timely payment of purchase price upon demand.

VMIG 2 – This designation denotes strong credit quality. Good protection is afforded by the strong short-term credit strength of the liquidity provider and structural and legal protections that ensure the timely payment of purchase price upon demand.

VMIG 3 – This designation denotes acceptable credit quality. Adequate protection is afforded by the satisfactory short-term credit strength of the liquidity provider and structural and legal protections that ensure the timely payment of purchase price upon demand.

SG – This designation denotes speculative-grade credit quality. Demand features rated in this category may be supported by a liquidity provider that does not have an investment grade short-term rating or may lack the structural and/or legal protections necessary to ensure the timely payment of purchase price upon demand.

Standard & Poor's

Long-Term Issue Credit Ratings (original maturity of one year or more)

AAA – An obligation rated ‘AAA’ has the highest rating assigned by Standard & Poor’s. The obligor’s capacity to meet its financial commitment on the obligation is extremely strong.

AA – An obligation rated ‘AA’ differs from the highest-rated obligations only to a small degree. The obligor’s capacity to meet its financial commitment on the obligation is very strong.

A – An obligation rated ‘A’ is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher-rated categories. However, the obligor’s capacity to meet its financial commitment on the obligation is still strong.

BBB – An obligation rated ‘BBB’ exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation.

BB; B; CCC; CC and C – Obligations rated ‘BB’, ‘B’, ‘CCC’, ‘CC’, and ‘C’ are regarded as having significant speculative characteristics. ‘BB’ indicates the lowest degree of speculation

and 'C' the highest. While such obligations will likely have some quality and protective characteristics, these may be outweighed by large uncertainties or major exposures to adverse conditions.

BB – An obligation rated 'BB' is less vulnerable to nonpayment than other speculative issues. However, it faces major ongoing uncertainties or exposure to adverse business, financial, or economic conditions which could lead to the obligor's inadequate capacity to meet its financial commitment on the obligation.

B – An obligation rated 'B' is more vulnerable to nonpayment than obligations rated 'BB', but the obligor currently has the capacity to meet its financial commitment on the obligation. Adverse business, financial, or economic conditions will likely impair the obligor's capacity or willingness to meet its financial commitment on the obligation.

CCC – An obligation rated 'CCC' is currently vulnerable to nonpayment, and is dependent upon favorable business, financial, and economic conditions for the obligor to meet its financial commitment on the obligation. In the event of adverse business, financial, or economic conditions, the obligor is not likely to have the capacity to meet its financial commitment on the obligation.

CC – An obligation rated 'CC' is currently highly vulnerable to nonpayment. The 'CC' rating is used when a default has not yet occurred, but Standard & Poor's expects default to be a virtual certainty, regardless of the anticipated time to default.

C – An obligation rated 'C' is currently highly vulnerable to nonpayment, and the obligation is expected to have lower relative seniority or lower ultimate recovery compared to obligations that are rated higher.

D – An obligation rated 'D' is in default or in breach of an imputed promise. For non-hybrid capital instruments, the 'D' rating category is used when payments on an obligation are not made on the date due, unless Standard & Poor's believes that such payments will be made within five business days in the absence of a stated grace period or within the earlier of the stated grace period or 30 calendar days. The 'D' rating also will be used upon the filing of a bankruptcy petition or the taking of similar action and where default on an obligation is a virtual certainty, for example due to automatic stay provisions. An obligation's rating is lowered to 'D' if it is subject to a distressed exchange offer.

NR – This indicates that no rating has been requested, or that there is insufficient information on which to base a rating, or that Standard & Poor's does not rate a particular obligation as a matter of policy.

Note: The ratings from 'AA' to 'CCC' may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the major rating categories.

Short-Term Issue Credit Ratings (original maturity of 365 days or less)

A-1 – A short-term obligation rated ‘A-1’ is rated in the highest category by Standard & Poor’s. The obligor’s capacity to meet its financial commitment on the obligation is strong. Within this category, certain obligations are designated with a plus sign (+). This indicates that the obligor’s capacity to meet its financial commitment on these obligations is extremely strong.

A-2 – A short-term obligation rated ‘A-2’ is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher rating categories. However, the obligor’s capacity to meet its financial commitment on the obligation is satisfactory.

A-3 – A short-term obligation rated ‘A-3’ exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation.

B – A short-term obligation rated ‘B’ is regarded as vulnerable and has significant speculative characteristics. The obligor currently has the capacity to meet its financial commitments; however, it faces major ongoing uncertainties which could lead to the obligor’s inadequate capacity to meet its financial commitments.

C – A short-term obligation rated ‘C’ is currently vulnerable to nonpayment and is dependent upon favorable business, financial, and economic conditions for the obligor to meet its financial commitment on the obligation.

D – A short-term obligation rated ‘D’ is in default or in breach of an imputed promise. For non-hybrid capital instruments, the ‘D’ rating category is used when payments on an obligation are not made on the due date, unless Standard & Poor’s believes that such payments will be made within any stated grace period. However, any stated grace period longer than five business days will be treated as five business days. The ‘D’ rating also will be used upon the filing of a bankruptcy petition or the taking of a similar action and where default on an obligation is a virtual certainty, for example due to automatic stay provisions. An obligation’s rating is lowered to ‘D’ if it is subject to a distressed exchange offer.

Municipal Short-Term Note Ratings (original maturity of 3 years or less)

SP-1 – Strong capacity to pay principal and interest. An issue determined to possess a very strong capacity to pay debt service is given a plus (+) designation.

SP-2 – Satisfactory capacity to pay principal and interest, with some vulnerability to adverse financial and economic changes over the term of the notes.

SP-3 – Speculative capacity to pay principal and interest.

Fitch Ratings

Long-Term Rating Scales

AAA – Highest credit quality. ‘AAA’ ratings denote the lowest expectation of default risk. They are assigned only in cases of exceptionally strong capacity for payment of financial commitments. This capacity is highly unlikely to be adversely affected by foreseeable events.

AA – Very high credit quality. ‘AA’ ratings denote expectations of very low default risk. They indicate very strong capacity for payment of financial commitments. This capacity is not significantly vulnerable to foreseeable events.

A – High credit quality. ‘A’ ratings denote expectations of low default risk. The capacity for payment of financial commitments is considered strong. This capacity may, nevertheless, be more vulnerable to adverse business or economic conditions than is the case for higher ratings.

BBB – Good credit quality. ‘BBB’ ratings indicate that expectations of default risk are currently low. The capacity for payment of financial commitments is considered adequate but adverse business or economic conditions are more likely to impair this capacity.

BB – Speculative. ‘BB’ ratings indicate an elevated vulnerability to default risk, particularly in the event of adverse changes in business or economic conditions over time; however, business or financial flexibility exists which supports the servicing of financial commitments.

B – Highly speculative. ‘B’ ratings indicate that material default risk is present, but a limited margin of safety remains. Financial commitments are currently being met; however, capacity for continued payment is vulnerable to deterioration in the business and economic environment.

CCC – Substantial credit risk. Default is a real possibility.

CC – Very high levels of credit risk. Default of some kind appears probable.

C – Exceptionally high levels of credit risk. Default is imminent or inevitable, or the issuer is in standstill. Conditions that are indicative of a ‘C’ category rating for an issuer include:

- a. the issuer has entered into a grace or cure period following non-payment of a material financial obligation;
- b. the issuer has entered into a temporary negotiated waiver or standstill agreement following a payment default on a material financial obligation; or
- c. Fitch Ratings otherwise believes a condition of ‘RD’ or ‘D’ to be imminent or inevitable, including through the formal announcement of a distressed debt exchange.

RD – Restricted default. ‘RD’ ratings indicate an issuer that in Fitch Ratings’ opinion has experienced an uncured payment default on a bond, loan or other material financial obligation but which has not entered into bankruptcy filings, administration, receivership, liquidation or

other formal winding-up procedure, and which has not otherwise ceased operating. This would include:

- a. the selective payment default on a specific class or currency of debt;
- b. the uncured expiry of any applicable grace period, cure period or default forbearance period following a payment default on a bank loan, capital markets security or other material financial obligation;
- c. the extension of multiple waivers or forbearance periods upon a payment default on one or more material financial obligations, either in series or in parallel; or
- d. execution of a distressed debt exchange on one or more material financial obligations.

D – Default. ‘D’ ratings indicate an issuer that in Fitch Ratings’ opinion has entered into bankruptcy filings, administration, receivership, liquidation or other formal winding-up procedure, or which has otherwise ceased business.

Default ratings are not assigned prospectively to entities or their obligations; within this context, non-payment on an instrument that contains a deferral feature or grace period will generally not be considered a default until after the expiration of the deferral or grace period, unless a default is otherwise driven by bankruptcy or other similar circumstance, or by a distressed debt exchange.

“Imminent” default typically refers to the occasion where a payment default has been intimated by the issuer, and is all but inevitable. This may, for example, be where an issuer has missed a scheduled payment, but (as is typical) has a grace period during which it may cure the payment default. Another alternative would be where an issuer has formally announced a distressed debt exchange, but the date of the exchange still lies several days or weeks in the immediate future.

In all cases, the assignment of a default rating reflects the agency’s opinion as to the most appropriate rating category consistent with the rest of its universe of ratings, and may differ from the definition of default under the terms of an issuer’s financial obligations or local commercial practice.

Note: The modifiers “+” or “-” may be appended to a rating to denote relative status within major rating categories. Such suffixes are not added to the ‘AAA’ Long-Term Issuer Default Rating (IDR) category, or to Long-Term IDR categories below ‘B’.

Short-Term Ratings

F1 – Highest short-term credit quality. Indicates the strongest intrinsic capacity for timely payment of financial commitments; may have an added “+” to denote any exceptionally strong credit feature.

F2 – Good short-term credit quality. Good intrinsic capacity for timely payment of financial commitments.

F3 – Fair short-term credit quality. The intrinsic capacity for timely payment of financial commitments is adequate.

B – Speculative short-term credit quality. Minimal capacity for timely payment of financial commitments, plus heightened vulnerability to near term adverse changes in financial and economic conditions.

C – High short-term default risk. Default is a real possibility.

RD – Restricted default. Indicates an entity that has defaulted on one or more of its financial commitments, although it continues to meet other financial obligations. Typically applicable to entity ratings only.

D – Default. Indicates a broad-based default event for an entity, or the default of a short-term obligation.

Appendix A

Proxy voting guidelines of The Putnam Funds

The proxy voting guidelines below summarize the funds' positions on various issues of concern to investors, and give a general indication of how fund portfolio securities will be voted on proposals dealing with particular issues. The funds' proxy voting service is instructed to vote all proxies relating to fund portfolio securities in accordance with these guidelines, except as otherwise instructed by the Director of Proxy Voting and Corporate Governance ("Proxy Voting Director"), a member of the Office of the Trustees who is appointed to assist in the coordination and voting of the funds' proxies.

The proxy voting guidelines are just that – guidelines. The guidelines are not exhaustive and do not address all potential voting issues. Because the circumstances of individual companies are so varied, there may be instances when the funds do not vote in strict adherence to these guidelines. For example, the proxy voting service is expected to bring to the Proxy Voting Director's attention proxy questions that are company-specific and of a non-routine nature and that, even if covered by the guidelines, may be more appropriately handled on a case-by-case basis. In addition, in interpreting the funds' proxy voting guidelines, the Trustees of The Putnam Funds are mindful of emerging best practices in the areas of corporate governance, environmental stewardship and sustainability, and social responsibility. Recognizing that these matters may, in some instances, bear on investment performance, they may from time to time be considerations in the funds' voting decisions.

Similarly, Putnam Management's investment professionals, as part of their ongoing review and analysis of all fund portfolio holdings, are responsible for monitoring significant corporate developments, including proxy proposals submitted to shareholders, and notifying the Proxy Voting Director of circumstances where the interests of fund shareholders may warrant a vote contrary to these guidelines. In such instances, the investment professionals submit a written recommendation to the Proxy Voting Director and the person or persons designated by Putnam Management's Legal and Compliance Department to assist in processing referral items under the funds' "Proxy Voting Procedures." The Proxy Voting Director, in consultation with a senior member of the Office of the Trustees and/or the Chair of the Board Policy and Nominating Committee, as appropriate, will determine how the funds' proxies will be voted. When indicated, the Chair of the Board Policy and Nominating Committee may consult with other members of the Committee or the full Board of Trustees.

The following guidelines are grouped according to the types of proposals generally presented to shareholders. Part I deals with proposals submitted by management and approved and recommended by a company's board of directors. Part II deals with proposals submitted by shareholders. Part III addresses unique considerations pertaining to non-U.S. issuers.

The Trustees of The Putnam Funds are committed to promoting strong corporate governance practices and encouraging corporate actions that enhance shareholder value through the judicious voting of the funds' proxies. It is the funds' policy to vote their proxies at all shareholder meetings where it is practicable to do so. In furtherance of this, the funds' have requested that their securities lending agent recall each domestic issuer's voting securities that are on loan, in

advance of the record date for the issuer's shareholder meetings, so that the funds may vote at the meetings.

The Putnam funds will disclose their proxy votes not later than August 31 of each year for the most recent 12-month period ended June 30, in accordance with the timetable established by SEC rules.

I. BOARD-APPROVED PROPOSALS¹

The vast majority of matters presented to shareholders for a vote involve proposals made by a company itself (sometimes referred to as "management proposals"), which have been approved and recommended by its board of directors. In view of the enhanced corporate governance practices currently being implemented in public companies and of the funds' intent to hold corporate boards accountable for their actions in promoting shareholder interests, the funds' proxies generally will be voted **for** the decisions reached by majority independent boards of directors, except as otherwise indicated in these guidelines. Accordingly, the funds' proxies will be voted **for** board-approved proposals, except as follows:

Matters relating to the Board of Directors

Uncontested Election of Directors

The funds' proxies will be voted **for** the election of a company's nominees for the board of directors, except as follows:

- The funds will **withhold votes** from the entire board of directors if
 - the board does not have a majority of independent directors,
 - the board has not established independent nominating, audit, and compensation committees,
 - the board has more than 15 members or fewer than five members, absent special circumstances,
 - the board has not acted to implement a policy requested in a shareholder proposal that received the support of a majority of the shares of the company cast at its previous two annual meetings, or
 - the board has adopted or renewed a shareholder rights plan (commonly referred to as a "poison pill") without shareholder approval during the current or prior calendar year.

¹ The guidelines in this section apply to proposals at U.S. companies. Please refer to Section III, Voting Shares of Non-U.S. Issuers, for additional guidelines applicable to proposals at non-U.S. companies.

- The funds will on a **case-by-case basis withhold votes** from the entire board of directors, or from particular directors as may be appropriate, if the board has approved compensation arrangements for one or more company executives that the funds determine are unreasonably excessive relative to the company's performance or has otherwise failed to observe good corporate governance practices.
- In light of the funds' belief that companies benefit from diversity on the board, the funds will **withhold votes** from the chair of the nominating committee if there are no women on the board, or in the case of a board of ten members or more, there are fewer than two women on the board.
- The funds will **withhold votes** from any nominee for director:
 - who is considered an independent director by the company and who has received compensation within the last three years from the company other than for service as a director (*e.g.*, investment banking, consulting, legal, or financial advisory fees),
 - who attends fewer than 75% of board and committee meetings without valid reasons for the absences (*e.g.*, illness, personal emergency, etc.) (if the director attendance disclosure does not explain the absences, or is otherwise inadequate, the funds will also withhold votes from the chair of the governance committee),
 - of a public company (Company A) who is employed as a senior executive of another company (Company B), if a director of Company B serves as a senior executive of Company A (commonly referred to as an "interlocking directorate"),
 - who serves on more than four unaffiliated public company boards (for the purpose of this guideline, boards of affiliated registered investment companies will count as one board),
 - who serves as an executive officer of any public company ("home company") while serving on more than two public company boards other than the home company board (the funds will withhold votes from the nominee at each company where the funds are shareholders; in addition, if the funds are shareholders of the executive's home company, the funds will withhold votes from members of the home company's governance committee), or
 - who is a member of the governance or other responsible committee, if the company has adopted without shareholder approval a bylaw provision shifting legal fees and costs to unsuccessful plaintiffs in intra-corporate litigation.

Commentary:

Board independence: Unless otherwise indicated, for the purposes of determining whether a board has a majority of independent directors and independent nominating, audit, and compensation committees, an "independent director" is a director who (1) meets all requirements to serve as an independent director of a company under the NYSE Corporate Governance Rules

(e.g., no material business relationships with the company and no present or recent employment relationship with the company including employment of an immediate family member as an executive officer), and (2) has not within the last three years accepted directly or indirectly any consulting, advisory, or other compensatory fee from the company other than in his or her capacity as a member of the board of directors or any board committee. The funds' Trustees believe that the recent (*i.e.*, within the last three years) receipt of any amount of compensation for services other than service as a director raises significant independence issues.

Board size: The funds' Trustees believe that the size of the board of directors can have a direct impact on the ability of the board to govern effectively. Boards that have too many members can be unwieldy and ultimately inhibit their ability to oversee management performance. Boards that have too few members can stifle innovation and lead to excessive influence by management.

Board diversity: The funds' Trustees believe that a company benefits from diversity on the board, including diversity with respect to gender, ethnicity, race, and experience. The Trustees are sensitive to the need for a variety of backgrounds among board members to further creative and independent thought during board deliberations. The Trustees expect company boards to strive for diversity in membership and to clearly explain their efforts and goals in this regard.

Time commitment: Being a director of a company requires a significant time commitment to adequately prepare for and attend the company's board and committee meetings. Directors must be able to commit the time and attention necessary to perform their fiduciary duties in proper fashion, particularly in times of crisis. The funds' Trustees are concerned about over-committed directors. In some cases, directors may serve on too many boards to make a meaningful contribution. This may be particularly true for senior executives of public companies (or other directors with substantially full-time employment) who serve on more than a few outside boards. Generally, the funds withhold support from directors serving on more than four unaffiliated public company boards, although an exception may be made in the case of a director who represents an investing firm with the sole purpose of managing a portfolio of investments that includes the company. The funds also withhold support from directors who serve as executive officers at a public company and on the boards of more than two unaffiliated public companies. The funds may also withhold votes from such directors on a case-by-case basis where it appears that they may be unable to discharge their duties properly because of excessive commitments.

Interlocking directorships: The funds' Trustees believe that interlocking directorships are inconsistent with the degree of independence required for outside directors of public companies.

Corporate governance practices: Board independence depends not only on its members' individual relationships, but also on the board's overall attitude toward management and shareholders. Independent boards are committed to good corporate governance practices and, by providing objective independent judgment, enhancing shareholder value. The funds may withhold votes on a case-by-case basis from some or all directors who, through their lack of independence or otherwise, have failed to observe good corporate governance practices or, through specific corporate action, have demonstrated a disregard for the interests of shareholders. Such instances may include cases where a board of directors has approved compensation arrangements for one or more members of management that, in the judgment of the funds' Trustees, are excessive by reasonable corporate standards relative to the company's record of

performance. It may also represent a disregard for the interests of shareholders if a board of directors fails to register an appropriate response when a director who fails to win the support of a majority of shareholders in an election (sometimes referred to as a “rejected director”) continues to serve on the board, or if a board of directors permits an executive to serve on an excessive number of public company boards. While the Trustees recognize that it may in some circumstances be appropriate for a rejected director to continue his or her service on the board, steps should be taken to address the concerns reflected by the shareholders’ lack of support for the rejected director. Adopting a fee-shifting bylaw provision without shareholder approval, which may discourage legitimate shareholders lawsuits as well as frivolous ones, is another example of disregard for shareholder interests.

Contested Elections of Directors

- The funds will vote on a **case-by-case basis** in contested elections of directors.

Classified Boards

- The funds will vote **against** proposals to classify a board, absent special circumstances indicating that shareholder interests would be better served by this structure.

Commentary: Under a typical classified board structure, the directors are divided into three classes, with each class serving a three-year term. The classified board structure results in directors serving staggered terms, with usually only a third of the directors up for re-election at any given annual meeting. The funds’ Trustees generally believe that it is appropriate for directors to stand for election each year, but recognize that, in special circumstances, shareholder interests may be better served under a classified board structure.

Other Board-Related Proposals

The funds will generally vote **for** proposals that have been approved by a majority independent board, and on a **case-by-case basis** on proposals that have been approved by a board that fails to meet the guidelines’ basic independence standards (*i.e.*, majority of independent directors and independent nominating, audit, and compensation committees).

Executive Compensation

The funds generally favor compensation programs that relate executive compensation to a company’s long-term performance. The funds will vote on a **case-by-case basis** on board-approved proposals relating to executive compensation, except as follows:

- Except where the funds are otherwise withholding votes for the entire board of directors, the funds will vote **for** stock option and restricted stock plans that will result in an average **annual** dilution of 1.67% or less (based on the disclosed term of the plan and including all equity-based plans).
- The funds will vote **against** stock option and restricted stock plans that will result in an average **annual** dilution of greater than 1.67% (based on the disclosed term of the plan and including all equity-based plans).

- The funds will vote **against** any stock option or restricted stock plan where the company's actual grants of stock options and restricted stock under all equity-based compensation plans during the prior three (3) fiscal years have resulted in an average annual dilution of greater than 1.67%.
- The funds will vote **against** stock option plans that permit the replacing or repricing of underwater options (and against any proposal to authorize a replacement or repricing of underwater options).
- The funds will vote **against** stock option plans that permit issuance of options with an exercise price below the stock's current market price.
- The funds will vote against stock option plans with evergreen features providing for automatic share replenishment.
- Except where the funds are otherwise withholding votes for the entire board of directors, the funds will vote **for** an employee stock purchase plan that has the following features: (1) the shares purchased under the plan are acquired for no less than 85% of their market value; (2) the offering period under the plan is 27 months or less; and (3) dilution is 10% or less.
- The funds will vote **for** proposals to approve a company's executive compensation program (*i.e.*, "say on pay" proposals in which the company's board proposes that shareholders indicate their support for the company's compensation philosophy, policies, and practices), except that the funds will vote **against** the proposal if the company is assigned to the lowest category, through independent third party benchmarking performed by the funds' proxy voting service, for the correlation of the company's executive compensation program with its performance.
- The funds will vote **for** bonus plans under which payments are treated as performance-based compensation that is deductible under Section 162(m) of the Internal Revenue Code of 1986, as amended, except that the funds will vote on a **case-by-case basis** if any of the following circumstances exist:
 - the amount per employee under the plan is unlimited, or
 - the plan's performance criteria is undisclosed, or
 - the company is assigned to the lowest category, through independent third party benchmarking performed by the funds' proxy voting service, for the correlation of the company's executive compensation program with its performance.

Commentary: Companies should have compensation programs that are reasonable and that align shareholder and management interests over the longer term. Further, disclosure of compensation programs should provide absolute transparency to shareholders regarding the sources and amounts of, and the factors influencing, executive compensation. Appropriately designed equity-based compensation plans can be an effective way to align the interests of long-term shareholders with the interests of management. However, the funds may vote against these or other executive compensation proposals on a case-by-case basis where compensation is

excessive by reasonable corporate standards, where a company fails to provide transparent disclosure of executive compensation, or, in some instances, where independent third-party benchmarking indicates that compensation is inadequately correlated with performance, relative to peer companies. (Examples of excessive executive compensation may include, but are not limited to, equity incentive plans that exceed the dilution criteria noted above, evergreen provisions, excessive perquisites, performance-based compensation programs that do not properly correlate reward and performance, “golden parachutes” or other severance arrangements that present conflicts between management’s interests and the interests of shareholders, and “golden coffins” or unearned death benefits.) In voting on a proposal relating to executive compensation, the funds will consider whether the proposal has been approved by an independent compensation committee of the board.

Capitalization

Many proxy proposals involve changes in a company’s capitalization, including the authorization of additional stock, the issuance of stock, the repurchase of outstanding stock, or the approval of a stock split. The management of a company’s capital structure involves a number of important issues, including cash flow, financing needs, and market conditions that are unique to the circumstances of the company. As a result, the funds will vote on a **case-by-case basis** on board-approved proposals involving changes to a company’s capitalization, except that where the funds are not otherwise withholding votes from the entire board of directors:

- The funds will vote **for** proposals relating to the authorization and issuance of additional common stock, except that the funds will evaluate such proposals on a **case-by-case basis** if they relate to a specific transaction or to common stock with special voting rights.
- The funds will vote **for** proposals to effect stock splits (excluding reverse stock splits).
- The funds will vote **for** proposals authorizing share repurchase programs, except that the funds will vote on a **case-by-case basis** if there are concerns that there may be abusive practices related to the share repurchase program.

Commentary: A company may decide to authorize additional shares of common stock for reasons relating to executive compensation or for routine business purposes. For the most part, these decisions are best left to the board of directors and senior management. The funds will vote on a case-by-case basis, however, on other proposals to change a company’s capitalization, including the authorization of common stock with special voting rights, the authorization or issuance of common stock in connection with a specific transaction (*e.g.*, an acquisition, merger or reorganization), the authorization or issuance of preferred stock, or the authorization of share repurchase programs that have the potential to facilitate abusive practices. Actions such as these involve a number of considerations that may affect a shareholder’s investment and that warrant a case-by-case determination. One such consideration is the funds’ belief that, as a general matter, common shareholders should have equal voting rights. With respect to proposals authorizing share repurchase programs, potentially abusive practices may involve programs that allow insiders’ shares to be repurchased at a higher price than the price that would be received in an open-market sale, using a share repurchase program to manipulate metrics for incentive

compensation, or engaging in greenmail or repurchases that may impact a company's long-term viability.

Acquisitions, Mergers, Reincorporations, Reorganizations and Other Transactions

Shareholders may be confronted with a number of different types of transactions, including acquisitions, mergers, reorganizations involving business combinations, liquidations, and the sale of all or substantially all of a company's assets, which may require their consent. Voting on such proposals involves considerations unique to each transaction. As a result, the funds will vote on a **case-by-case basis** on board-approved proposals to effect these types of transactions, except as follows:

- The funds will vote **for** mergers and reorganizations involving business combinations designed solely to reincorporate a company in Delaware.

Commentary: A company may reincorporate into another state through a merger or reorganization by setting up a "shell" company in a different state and then merging the company into the new company. While reincorporation into states with extensive and established corporate laws – notably Delaware – provides companies and shareholders with a more well-defined legal framework, shareholders must carefully consider the reasons for a reincorporation into another jurisdiction, including especially an offshore jurisdiction.

Anti-Takeover Measures

Some proxy proposals involve efforts by management to make it more difficult for an outside party to take control of the company without the approval of the company's board of directors. These include the adoption of a shareholder rights plan, requiring supermajority voting on particular issues, the adoption of fair price provisions, the issuance of blank check preferred stock, and the creation of a separate class of stock with disparate voting rights. Such proposals may adversely affect shareholder rights, lead to management entrenchment, or create conflicts of interest. As a result, the funds will vote **against** board-approved proposals to adopt such anti-takeover measures, except as follows:

- The funds will vote on a **case-by-case basis** on proposals to ratify or approve shareholder rights plans; and
- The funds will vote on a **case-by-case basis** on proposals to adopt fair price provisions.

Commentary: The funds' Trustees recognize that poison pills and fair price provisions may enhance or protect shareholder value under certain circumstances, and accordingly the funds will consider proposals to approve such matters on a case-by-case basis.

Other Business Matters

Many proxies involve approval of routine business matters, such as changing a company's name, ratifying the appointment of auditors, and procedural matters relating to the shareholder meeting.

For the most part, these routine matters do not materially affect shareholder interests and are best left to the board of directors and senior management of the company. The funds will vote **for** board-approved proposals approving such matters, except as follows:

- The funds will vote on a **case-by-case basis** on proposals to amend a company's charter or bylaws (except for charter amendments necessary to effect stock splits, to change a company's name or to authorize additional shares of common stock).
- The funds will vote **against** authorization to transact other unidentified, substantive business at the meeting.
- The funds will vote on a **case-by-case basis** on proposals to ratify the selection of independent auditors if there is evidence that the audit firm's independence or the integrity of an audit is compromised.
- The funds will vote on a **case-by-case basis** on board-approved proposals that conflict with shareholder proposals.
- The funds will vote on a **case-by-case basis** on other business matters where the funds are otherwise withholding votes for the entire board of directors.

Commentary: Charter and bylaw amendments (for example, amendments implementing proxy access proposals), board-approved proposals that conflict with shareholder proposals, and the transaction of other unidentified, substantive business at a shareholder meeting may directly affect shareholder rights and have a significant impact on shareholder value. As a result, the funds do not view these items as routine business matters. Putnam Management's investment professionals and the funds' proxy voting service may also bring to the Proxy Voting Director's attention company-specific items that they believe to be non-routine and warranting special consideration. Under these circumstances, the funds will vote on a case-by-case basis.

The fund's proxy voting service may identify circumstances that call into question an audit firm's independence or the integrity of an audit. These circumstances may include recent material restatements of financials, unusual audit fees, egregious contractual relationships (including inappropriately one-sided dispute resolution procedures), and aggressive accounting policies. The funds will consider proposals to ratify the selection of auditors in these circumstances on a case-by-case basis. In all other cases, given the existence of rules that enhance the independence of audit committees and auditors by, for example, prohibiting auditors from performing a range of non-audit services for audit clients, the funds will vote for the ratification of independent auditors

II. SHAREHOLDER PROPOSALS

SEC regulations permit shareholders to submit proposals for inclusion in a company's proxy statement. These proposals generally seek to change some aspect of the company's corporate governance structure or to change some aspect of its business operations. The funds generally will vote **in accordance with the recommendation of the company's board of directors** on all shareholder proposals, except as follows:

- The funds will vote on a **case-by-case basis** on shareholder proposals requiring that the chairman's position be filled by someone other than the chief executive officer.
- The funds will vote **for** shareholder proposals asking that director nominees receive support from holders of a majority of votes cast or a majority of shares outstanding in order to be (re)elected.
- The funds will vote **for** shareholder proposals to declassify a board, absent special circumstances which would indicate that shareholder interests are better served by a classified board structure.
- The funds will vote **for** shareholder proposals to eliminate supermajority vote requirements in the company's charter documents, except that the funds will vote on a **case-by-case basis** on such proposals at controlled companies (Companies in which an individual or a group voting collectively holds a majority of the voting interest).
- The funds will vote **for** shareholder proposals to require shareholder approval of shareholder rights plans.
- The funds will vote **for** shareholder proposals to amend a company's charter documents to permit shareholders to call special meetings, but only if both of the following conditions are met:
 - the proposed amendment limits the right to call special meetings to shareholders holding at least 15% of the company's outstanding shares, and
 - applicable state law does not otherwise provide shareholders with the right to call special meetings.
- The funds will vote on a **case-by-case basis** on shareholder proposals relating to proxy access.
- The funds will vote **for** shareholder proposals requiring companies to make cash payments under management severance agreements only if both of the following conditions are met:
 - the company undergoes a change in control, and
 - the change in control results in the termination of employment for the person receiving the severance payment.
- The funds will vote **for** shareholder proposals requiring companies to accelerate vesting of equity awards under management severance agreements only if both of the following conditions are met:
 - the company undergoes a change in control, and
 - the change in control results in the termination of employment for the person receiving the severance payment.

- The funds will vote **on a case-by-case basis** on shareholder proposals to limit a company's ability to make excise tax gross-up payments under management severance agreements as well as proposals to limit income or other tax gross-up payments.
- The funds will vote **on a case-by-case basis** on shareholder proposals requesting that the board adopt a policy to recoup, in the event of a significant restatement of financial results or significant extraordinary write-off, to the fullest extent practicable, for the benefit of the company, all performance-based bonuses or awards that were paid to senior executives based on the company having met or exceeded specific performance targets to the extent that the specific performance targets were not, in fact, met.
- The funds will vote **for** shareholder proposals calling for the company to obtain shareholder approval for any future golden coffins or unearned death benefits (payments or awards of unearned salary or bonus, accelerated vesting or the continuation of unvested equity awards, perquisites or other payments or awards in respect of an executive following his or her death), and **for** shareholder proposals calling for the company to cease providing golden coffins or unearned death benefits.
- The funds will vote **for** shareholder proposals requiring a company to report on its executive retirement benefits (*e.g.*, deferred compensation, split-dollar life insurance, SERPs and pension benefits).
- The funds will vote **for** shareholder proposals requiring a company to disclose its relationships with executive compensation consultants (*e.g.*, whether the company, the board or the compensation committee retained the consultant, the types of services provided by the consultant over the past five years, and a list of the consultant's clients on which any of the company's executives serve as a director).
- The funds will vote on a **case-by-case basis** on shareholder proposals related to environmental and social initiatives.
- The funds will vote **for** shareholder proposals that are consistent with the funds' proxy voting guidelines for board-approved proposals.
- The funds will vote on a **case-by-case basis** on shareholder proposals that conflict with board-approved proposals.
- The funds will vote on a **case-by-case basis** on other shareholder proposals where the funds are otherwise withholding votes for the entire board of directors.

Commentary: The funds' Trustees believe that effective corporate reforms should be promoted by holding boards of directors – and in particular their independent directors – accountable for their actions, rather than by imposing additional legal restrictions on board governance through piecemeal proposals. As stated above, the funds' Trustees believe that boards of directors and management are responsible for ensuring that their businesses are operating in accordance with high legal and ethical standards and should be held accountable for resulting corporate behavior. Accordingly, the funds will generally support the recommendations of boards that meet the basic independence and governance standards established in these guidelines. Where boards fail to

meet these standards, the funds will generally evaluate shareholder proposals on a case-by-case basis.

There are some types of proposals that the funds will evaluate on a case-by-case basis in any event. For example, when shareholder proposals conflict with board-approved approvals, the funds will generally evaluate both proposals on a case-by-case basis, considering the materiality of the differences between the proposals, the benefits to shareholders from each proposal, and the strength of the company's corporate governance, among other factors, in determining which proposal to support. In addition, the funds will also consider proposals requiring that the chairman's position be filled by someone other than the company's chief executive officer on a case-by-case basis, recognizing that in some cases this separation may advance the company's corporate governance while in other cases it may be less necessary to the sound governance of the company. The funds will take into account the level of independent leadership on a company's board in evaluating these proposals. The funds will be more likely to vote for shareholder proposals calling for the separation of the roles of the chief executive and chair of the board if the company has a non-independent board, non-independent directors on the nominating, compensation or audit committees, or a weak lead independent director role, or if the board has not worked toward addressing material risks to the company, has chosen not to intervene when management interests conflict with shareholder interests, or has had other material governance failures.

While the funds will also consider shareholder proposals relating to proxy access on a case-by-case basis, the funds will generally vote in favor of market-standard proxy access proposals (for example, proxy access proposals allowing a shareholder or group of up to 20 shareholders holding three percent of a company's outstanding shares for at least three years the right to nominate the greater of up to two directors or 20% of the board). The funds believe that shareholders meeting these criteria generally have demonstrated a sufficient interest in the company that they should be granted access to a company's proxy materials to include their nominees for election alongside the company's nominees.

The funds generally support shareholder proposals to implement majority voting for directors, observing that majority voting is an emerging standard intended to encourage directors to be attentive to shareholders' interests. The funds also generally support shareholder proposals to declassify a board, to eliminate supermajority vote requirements, or to require shareholder approval of shareholder rights plans. (For proposals to eliminate supermajority vote requirements at companies in which an individual or a group voting collectively holds a majority of the voting interest, the funds vote on a case-by-case basis, taking into account the interests of minority shareholders.) The funds' Trustees believe that these shareholder proposals further the goals of reducing management entrenchment and conflicts of interest, and aligning management's interests with shareholders' interests in evaluating proposed acquisitions of the company. The Trustees also believe that shareholder proposals to limit severance payments may further these goals in some instances. In general, the funds favor arrangements in which severance payments are made to an executive only when there is a change in control and the executive loses his or her job as a result. Arrangements in which an executive receives a payment upon a change of control even if the executive retains employment introduce potential conflicts of interest and may distract management focus from the long term success of the company.

In evaluating shareholder proposals that address severance payments, the funds distinguish between cash and equity payments. The funds generally do not favor cash payments to executives upon a change in control transaction if the executive retains employment. However, the funds recognize that accelerated vesting of equity incentives, even without termination of employment, may help to align management and shareholder interests in some instances, and will evaluate shareholder proposals addressing accelerated vesting of equity incentive payments on a case-by-case basis.

When severance payments exceed a certain amount based on the executive's previous compensation, the payments may be subject to an excise tax. Some compensation arrangements provide for full excise tax gross-ups, which means that the company pays the executive sufficient additional amounts to cover the cost of the excise tax. The funds are concerned that the benefits of providing full excise tax gross-ups to executives may be outweighed by the cost to the company of the gross-up payments. Accordingly, the funds will vote on a case-by-case basis on shareholder proposals to curtail excise tax gross-up payments. The funds generally favor arrangements in which severance payments do not trigger an excise tax or in which the company's obligations with respect to gross-up payments are limited in a reasonable manner.

The funds' Trustees believe that performance-based compensation can be an effective tool for aligning management and shareholder interests. However, to fulfill its purpose, performance compensation should only be paid to executives if the performance targets are actually met. A significant restatement of financial results or a significant extraordinary write-off may reveal that executives who were previously paid performance compensation did not actually deliver the required business performance to earn that compensation. In these circumstances, it may be appropriate for the company to recoup this performance compensation. The funds will consider on a case-by-case basis shareholder proposals requesting that the board adopt a policy to recoup, in the event of a significant restatement of financial results or significant extraordinary write-off, performance-based bonuses or awards paid to senior executives based on the company having met or exceeded specific performance targets to the extent that the specific performance targets were not, in fact, met. The funds do not believe that such a policy should necessarily disadvantage a company in recruiting executives, as executives should understand that they are only entitled to performance compensation based on the actual performance they deliver.

The funds' Trustees disfavor golden coffins or unearned death benefits, and the funds will generally support shareholder proposals to restrict or terminate these practices. The Trustees will also consider whether a company's overall compensation arrangements, taking all of the pertinent circumstances into account, constitute excessive compensation or otherwise reflect poorly on the corporate governance practices of the company. As the Trustees evaluate these matters, they will be mindful of evolving practices and legislation relevant to executive compensation and corporate governance.

The funds' Trustees recognize the importance of environmental and social responsibility. In evaluating shareholder proposals with respect to environmental and social initiatives (including initiatives related to climate change and gender pay equity), the funds will take into account the relevance of the proposal to the company's business and the practicality of implementing the proposal, including the impact on the company's business activities, operations, and stakeholders. The funds will generally vote for proposals calling for reasonable study or

reporting relating to climate change matters that are clearly relevant to the company's business activities, taking into consideration, when appropriate, the company's current publicly available disclosure and the company's level of disclosure and oversight of climate change matters relative to its industry peers. With respect to shareholder proposals related to diversity initiatives, the funds will assess the proposals in a manner that is broadly consistent with the funds' approach to holding the board of directors directly accountable for diversity on the board.

The funds' Trustees also believe that shareholder proposals that are intended to increase transparency, particularly with respect to executive compensation, without establishing rigid restrictions upon a company's ability to attract and motivate talented executives, are generally beneficial to sound corporate governance without imposing undue burdens. The funds will generally support shareholder proposals calling for reasonable disclosure.

III. VOTING SHARES OF NON-U.S. ISSUERS

Many of the Putnam funds invest on a global basis, and, as a result, they may hold, and have an opportunity to vote, shares in non-U.S. issuers – i.e., issuers that are incorporated under the laws of foreign jurisdictions and whose shares are not listed on a U.S. securities exchange or the NASDAQ stock market.

In many non-U.S. markets, shareholders who vote proxies of a non-U.S. issuer are not able to trade in that company's stock on or around the shareholder meeting date. This practice is known as "share blocking." In countries where share blocking is practiced, the funds will vote proxies only with direction from Putnam Management's investment professionals.

In addition, some non-U.S. markets require that a company's shares be re-registered out of the name of the local custodian or nominee into the name of the shareholder for the shareholder to be able to vote at the meeting. This practice is known as "share re-registration." As a result, shareholders, including the funds, are not able to trade in that company's stock until the shares are re-registered back in the name of the local custodian or nominee following the meeting. In countries where share re-registration is practiced, the funds will generally not vote proxies.

Protection for shareholders of non-U.S. issuers may vary significantly from jurisdiction to jurisdiction. Laws governing non-U.S. issuers may, in some cases, provide substantially less protection for shareholders than do U.S. laws. As a result, the guidelines applicable to U.S. issuers, which are premised on the existence of a sound corporate governance and disclosure framework, may not be appropriate under some circumstances for non-U.S. issuers. However, the funds will vote proxies of non-U.S. issuers **in accordance with the guidelines applicable to U.S. issuers** except as follows:

Uncontested Board Elections

China, India, Indonesia, Philippines, Taiwan and Thailand

- The funds will **withhold votes** from the entire board of directors if
- fewer than one-third of the directors are independent directors, or
- the board has not established audit, compensation and nominating committees each composed of a majority of independent directors.

Commentary: Whether a director is considered “independent” or not will be determined by reference to local corporate law or listing standards.

Europe ex-United Kingdom

- The funds will **withhold votes** from the entire board of directors if
- the board has not established audit and compensation committees each composed of a majority of independent, non-executive directors, or
- the board has not established a nominating committee composed of a majority of independent directors.

Commentary: An “independent director” under the European Commission’s guidelines is one who is free of any business, family or other relationship, with the company, its controlling shareholder or the management of either, that creates a conflict of interest such as to impair his judgment. A “non-executive director” is one who is not engaged in the daily management of the company.

Germany

- For companies subject to “co-determination,” the funds will vote **for** the election of nominees to the supervisory board, except that the funds will vote on a **case-by-case basis** for any nominee who is either an employee of the company or who is otherwise affiliated with the company (as determined by the funds’ proxy voting service).
- The funds will **withhold votes** for the election of a former member of the company’s managerial board to chair of the supervisory board.

Commentary: German corporate governance is characterized by a two-tier board system—a managerial board composed of the company’s executive officers, and a supervisory board. The supervisory board appoints the members of the managerial board. Shareholders elect members of the supervisory board, except that in the case of companies with a large number of employees, company employees are allowed to elect some of the supervisory board members (one-half of supervisory board members are elected by company employees at companies with more than 2,000 employees; one-third of the supervisory board members are elected by company employees at companies with more than 500 employees but fewer than 2,000). This “co-

determination” practice may increase the chances that the supervisory board of a large German company does not contain a majority of independent members. In this situation, under the Fund’s proxy voting guidelines applicable to U.S. issuers, the funds would vote against all nominees. However, in the case of companies subject to “co-determination” and with the goal of supporting independent nominees, the Funds will vote for supervisory board members who are neither employees of the company nor otherwise affiliated with the company.

Consistent with the funds’ belief that the interests of shareholders are best protected by boards with strong, independent leadership, the funds will withhold votes for the election of former chairs of the managerial board to chair of the supervisory board.

Hong Kong

- The funds will **withhold votes** from the entire board of directors if
- fewer than one-third of the directors are independent directors, or
 - the board has not established audit, compensation and nominating committees each with at least a majority of its members being independent directors, or
 - the chair of the audit, compensation or nominating committee is not an independent director.

Commentary. For purposes of these guidelines, an “independent director” is a director that has no material, financial or other current relationships with the company. In determining whether a director is independent, the funds will apply the standards included in the Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited Section 3.13.

Italy

- The funds will **withhold votes** from any director not identified in the proxy materials.

Commentary: In Italy, companies have the right to nominate co-opted directors² for election to the board at the next annual general meeting, but do not have to indicate, until the day of the annual meeting, whether or not they are nominating a co-opted director for election. When a company does not explicitly state in its proxy materials that co-opted directors are standing for election, shareholders will not know for sure who the board nominees are until the actual meeting occurs. The funds will withhold support from any such co-opted director on the grounds that there was insufficient information for evaluation before the meeting.

² A co-opted director is an individual appointed to the board by incumbent directors to replace a director who was elected by directors but who leaves the board (through resignation or death) before the end of his or her term.

Japan

- For companies that have established a U.S.-style corporate governance structure, the funds will **withhold votes** from the entire board of directors if
 - the board does not have a majority of outside directors,
 - the board has not established nominating and compensation committees composed of a majority of outside directors, or
 - the board has not established an audit committee composed of a majority of independent directors.
- The funds will **withhold votes** for the appointment of members of a company's board of statutory auditors if a majority of the members of the board of statutory auditors is not independent.

Commentary:

Board structure: Recent amendments to the Japanese Commercial Code give companies the option to adopt a U.S.-style corporate governance structure (*i.e.*, a board of directors and audit, nominating, and compensation committees). The funds will vote **for** proposals to amend a company's articles of incorporation to adopt the U.S.-style corporate structure.

Definition of outside director and independent director: Corporate governance principles in Japan focus on the distinction between outside directors and independent directors. Under these principles, an outside director is a director who is not and has never been a director, executive, or employee of the company or its parent company, subsidiaries or affiliates. An outside director is "independent" if that person can make decisions completely independent from the managers of the company, its parent, subsidiaries, or affiliates and does not have a material relationship with the company (*i.e.*, major client, trading partner, or other business relationship; familial relationship with current director or executive; etc.). The guidelines have incorporated these definitions in applying the board independence standards above.

Korea

- The funds will **withhold votes** from the entire board of directors if
 - fewer than half of the directors are outside directors,
 - the board has not established a nominating committee with at least half of the members being outside directors, or
 - the board has not established an audit committee composed of at least three members and in which at least two-thirds of its members are outside directors.
- The funds will vote **withhold votes** from nominees to the audit committee if the board has not established an audit committee composed of (or proposed to be composed of) at

least three members, and of which at least two-thirds of its members are (or will be) outside directors.

Commentary: For purposes of these guidelines, an “outside director” is a director that is independent from the management or controlling shareholders of the company, and holds no interests that might impair the performance his or her duties impartially with respect to the company, management or controlling shareholder. In determining whether a director is an outside director, the funds will also apply the standards included in Article 415-2(2) of the Korean Commercial Code (*i.e.*, no employment relationship with the company for a period of two years before serving on the committee, no director or employment relationship with the company’s largest shareholder, etc.) and may consider other business relationships that would affect the independence of an outside director.

Malaysia

- The funds will **withhold votes** from the entire board of directors if
- in the case of a board with an independent director serving as chair, fewer than one-third of the directors are independent directors; or, in the case of a board not chaired by an independent director, less than a majority of the directors are independent directors,
 - the board has not established audit and nominating committees with at least a majority of the members being independent directors and all of the members being non-executive directors, or
 - the board has not established a compensation committee with at least a majority of the members being non-executive directors.

Commentary. For purposes of these guidelines, an “independent director” is a director who has no material, financial or other current relationships with the company. In determining whether a director is independent, the funds will apply the standards included in the Malaysia Code of Corporate Governance, Commentary to Recommendation 3.1. A “non-executive director” is a director who does not take on primary responsibility for leadership of the company.

Russia

- The funds will vote on a **case-by-case basis** for the election of nominees to the board of directors.

Commentary: In Russia, director elections are typically handled through a cumulative voting process. Cumulative voting allows shareholders to cast all of their votes for a single nominee for the board of directors, or to allocate their votes among nominees in any other way. In contrast, in “regular” voting, shareholders may not give more than one vote per share to any single nominee. Cumulative voting can help to strengthen the ability of minority shareholders to elect a director.

In Russia, as in some other emerging markets, standards of corporate governance are usually behind those in developed markets. Rather than vote against the entire board of directors, as the funds generally would in the case of a company whose board fails to meet the funds' standards for independence, the funds may, on a case by case basis, cast all of their votes for one or more independent director nominees. The funds believe that it is important to increase the number of independent directors on the boards of Russian companies to mitigate the risks associated with dominant shareholders.

Singapore

- The funds will **withhold votes** from the entire board of directors if
- in the case of a board with an independent director serving as chair, fewer than one-third of the directors are independent directors; or, in the case of a board not chaired by an independent director, fewer than half of the directors are independent directors,
 - the board has not established audit and compensation committees, each with an independent director serving as chair, with at least a majority of the members being independent directors, and with all of the directors being non-executive directors, or
 - the board has not established a nominating committee, with an independent director serving as chair, and with at least a majority of the members being independent directors.

Commentary: For purposes of these guidelines, an “independent director” is a director that has no material, financial or other current relationships with the company. In determining whether a director is independent, the funds will apply the standards included in the Singapore Code of Corporate Governance, Guideline 2.3. A “non-executive director” is a director who is not employed with the company.

United Kingdom

- The funds will **withhold votes** from the entire board of directors if
- fewer than half of the directors are independent non-executive directors,
 - the board has not established a nomination committee composed of a majority of independent non-executive directors, or
 - the board has not established compensation and audit committees composed of (1) at least three directors (in the case of smaller companies, two directors) and (2) solely independent non-executive directors, provided that, to the extent permitted under the United Kingdom's Combined Code on Corporate Governance, the company chairman may serve on (but not serve as chairman of) the compensation and audit committees if the chairman was considered independent upon his or her appointment as chairman.

- The funds will **withhold votes** from any nominee for director who is considered an independent director by the company and who has received compensation within the last three years from the company other than for service as a director, such as investment banking, consulting, legal, or financial advisory fees.
- The funds will vote **for** proposals to amend a company's articles of association to authorize boards to approve situations that might be interpreted to present potential conflicts of interest affecting a director.

Commentary:

Application of guidelines: Although the United Kingdom's Combined Code on Corporate Governance ("Combined Code") has adopted the "comply and explain" approach to corporate governance, the funds' Trustees believe that the guidelines discussed above with respect to board independence standards are integral to the protection of investors in U.K. companies. As a result, these guidelines will generally be applied in a prescriptive manner.

Definition of independence: For the purposes of these guidelines, a non-executive director shall be considered independent if the director meets the independence standards in section A.3.1 of the Combined Code (*i.e.*, no material business or employment relationships with the company, no remuneration from the company for non-board services, no close family ties with senior employees or directors of the company, etc.), except that the funds do not view service on the board for more than nine years as affecting a director's independence. Company chairmen in the U.K. are generally considered affiliated upon appointment as chairman due to the nature of the position of chairman. Consistent with the Combined Code, a company chairman who was considered independent upon appointment as chairman: may serve as a member of, but not as the chairman of, the compensation (remuneration) committee; and, in the case of smaller companies, may serve as a member of, but not as the chairman of, the audit committee.

Smaller companies: A smaller company is one that is below the FTSE 350 throughout the year immediately prior to the reporting year.

Conflicts of interest: The Companies Act 2006 requires a director to avoid a situation in which he or she has, or can have, a direct or indirect interest that conflicts, or possibly may conflict, with the interests of the company. This broadly written requirement could be construed to prevent a director from becoming a trustee or director of another organization. Provided there are reasonable safeguards, such as the exclusion of the relevant director from deliberations, the funds believe that the board may approve this type of potential conflict of interest in its discretion.

All other jurisdictions

- The funds will vote **for** supervisory board nominees when the supervisory board meets the funds' independence standards, otherwise the funds will vote **against** supervisory board nominees.

Commentary: Companies in many jurisdictions operate under the oversight of supervisory boards. In the absence of jurisdiction-specific guidelines, the funds will generally hold

supervisory boards to the same standards of independence as it applies to boards of directors in the United States.

Contested Board Elections

Italy

- The funds will vote **for** the management- or board-sponsored slate of nominees if the board meets the funds' independence standards, and **against** the management- or board-sponsored slate of nominees if the board does not meet the funds' independence standards; the funds will not vote on shareholder-proposed slates of nominees.

Commentary: Contested elections in Italy may involve a variety of competing slates of nominees. In these circumstances, the funds will focus their analysis on the board- or management-sponsored slate.

Corporate Governance

- The funds will vote **for** proposals to change the size of a board if the board meets the funds' independence standards, and **against** proposals to change the size of a board if the board does not meet the funds' independence standards.
- The funds will vote **for** shareholder proposals calling for a majority of a company's directors to be independent of management.
- The funds will vote **for** shareholder proposals seeking to increase the independence of board nominating, audit, and compensation committees.
- The funds will vote **for** shareholder proposals that implement corporate governance standards similar to those established under U.S. federal law and the listing requirements of U.S. stock exchanges, and that do not otherwise violate the laws of the jurisdiction under which the company is incorporated.

Australia

- The funds will vote on a **case-by-case basis** on board spill resolutions.

Commentary: The *Corporations Amendment (Improving Accountability on Director and Executive Compensation) Bill 2011* provides that, if a company's remuneration report receives a "no" vote of 25% or more of all votes cast at two consecutive annual general meetings, at the second annual general meeting, a spill resolution must be proposed. If the spill resolution is approved (by simple majority), then a further meeting to elect a new board (excluding the managing director) must be held within 90 days. The funds will consider board spill resolutions on a case-by-case basis.

Europe

- The funds will vote **for** proposals to ratify board acts, except that the funds will consider these proposals on a **case-by-case basis** if the funds' proxy voting service has recommended a vote against the proposal.

Taiwan

- The funds will vote **against** proposals to release directors from their non-competition obligations (their obligations not to engage in any business that is competitive with the company), unless the proposal is narrowly drafted to permit directors to engage in a business that is competitive with the company only on behalf of a wholly-owned subsidiary of the company.

Compensation

- The funds will vote **for** proposals to approve annual directors' fees, except that the funds will consider these proposals on a **case-by-case basis** in each case in which the funds' proxy voting service has recommended a vote against such a proposal.
- The funds will vote **for** non-binding proposals to approve remuneration reports, except that the funds will vote **against** proposals to approve remuneration reports that indicate that awards under a long-term incentive plan are not linked to performance targets.

Commentary: Since proposals relating to directors' fees for non-U.S. issuers generally address relatively modest fees paid to non-executive directors, the funds generally support these proposals, provided that the fees are consistent with directors' fees paid by the company's peers and do not otherwise appear unwarranted. Consistent with the approach taken for U.S. issuers, the funds generally favor compensation programs that relate executive compensation to a company's long-term performance and will support non-binding remuneration reports unless such a correlation is not made.

Europe and Asia ex-Japan

- In the case of proposals that do not include sufficient information for determining average annual dilution, the funds will vote **for** stock option and restricted stock plans that will result in an average gross potential dilution of 5% or less.

Commentary: Asia ex-Japan means China, Hong Kong, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand. In these markets, companies may not disclose the life of the plan and there may not be a specific number of shares requested; therefore, it may not be possible to determine the average annual dilution related to the plan and apply the funds' standard dilution test.

France

- The funds will vote **for** an employee stock purchase plan or share save scheme that has the following features: (1) the shares purchased under the plan are acquired for no less

than 70% of their market value; (2) the vesting period is greater than or equal to 10 years; (3) the offering period under the plan is 27 months or less; and (4) dilution is 10% or less.

Commentary: To conform to local market practice, the funds support plans or schemes at French issuers that permit the purchase of shares at up to a 30% discount (*i.e.*, shares may be purchased for no less than 70% of their market value). By comparison, for U.S. issuers, the funds do not support employee stock purchase plans that permit shares to be acquired at more than a 15% discount (*i.e.*, for less than 85% of their market value); in the United Kingdom, up to a 20% discount is permitted.

United Kingdom

- The funds will vote **for** an employee stock purchase plan or share save scheme that has the following features: (1) the shares purchased under the plan are acquired for no less than 80% of their market value; (2) the offering period under the plan is 27 months or less; and (3) dilution is 10% or less.

Commentary: These are the same features that the funds require of employee stock purchase plans proposed by U.S. issuers, except that, to conform to local market practice, the funds support plans or schemes at United Kingdom issuers that permit the purchase of shares at up to a 20% discount (*i.e.*, shares may be purchased for no less than 80% of their market value). By comparison, for U.S. issuers, the funds do not support employee stock purchase plans that permit shares to be acquired at more than a 15% discount (*i.e.*, for less than 85% of their market value).

Capitalization

Unless a proposal is directly addressed by a country-specific guideline:

- The funds will vote **for** proposals
 - to issue additional common stock representing up to 20% of the company's outstanding common stock, where shareholders *do not* have preemptive rights, or
 - to issue additional common stock representing up to 100% of the company's outstanding common stock, where shareholders *do have* preemptive rights.
- The funds will vote **for** proposals to authorize share repurchase programs that are recommended for approval by the funds' proxy voting service; otherwise, the funds will vote **against** such proposals.

Australia

- The funds will vote **for** proposals to carve out, from the general cap on non-*pro rata* share issues of 15% of total equity in a rolling 12-month period, a particular proposed issue of shares or a particular issue of shares made previously within the 12-month period, if the company's board meets the funds' independence standards; if the company's board does not meet the funds' independence standards, then the funds will vote **against** these proposals.

- The funds will vote **for** proposals to approve the grant of equity awards to directors, except that the funds will consider these proposals on a **case-by-case basis** if the funds' proxy voting service has recommended a vote against the proposal.

China

- The funds will vote **for** proposals to issue and/or to trade in non-convertible, convertible and/or exchangeable debt obligations, except that the funds will consider these proposals on a **case-by-case basis** if the funds' proxy voting service has recommended a vote against the proposal.

Hong Kong

- The funds will vote **for** proposals to approve a general mandate permitting the company to engage in non-*pro rata* share issues of up to 20% of total equity in a year if the company's board meets the funds' independence standards; if the company's board does not meet the funds' independence standards, then the funds will vote **against** these proposals.
- The funds will **for** proposals to approve the reissuance of shares acquired by the company under a share repurchase program, provided that: (1) the funds supported (or would have supported, in accordance with these guidelines) the share repurchase program, (2) the reissued shares represent no more than 10% of the company's outstanding shares (measured immediately before the reissuance), and (3) the reissued shares are sold for no less than 85% of current market value.

France

- The funds will vote **for** proposals to increase authorized shares, except that the funds will consider these proposals on a **case-by-case basis** if the funds' proxy voting service has recommended a vote against the proposal.
- The funds will vote **against** proposals to authorize the issuance of common stock or convertible debt instruments and against proposals to authorize the repurchase and/or reissuance of shares where those authorizations may be used, without further shareholder approval, as anti-takeover measures.

New Zealand

- The funds will vote **for** proposals to approve the grant of equity awards to directors, except that the funds will consider these proposals on a **case-by-case basis** if the funds' proxy voting service has recommended a vote against the proposal.

Commentary: In light of the prevalence of certain types of capitalization proposals in Australia, China, Hong Kong, France and New Zealand, the funds have adopted guidelines specific to those jurisdictions.

Other Business Matters

- The funds will vote **for** proposals permitting companies to deliver reports and other materials electronically (*e.g.*, via website posting).
- The funds will vote **for** proposals permitting companies to issue regulatory reports in English.
- The funds will vote **against** proposals to shorten shareholder meeting notice periods to fourteen days.

Commentary: Under Directive 2007/36/EC of the European Parliament and the Council of the European Union, companies have the option to request shareholder approval to set the notice period for special meetings at 14 days provided that certain electronic voting and communication requirements are met. The funds believe that the 14 day notice period is too short to provide overseas shareholders with sufficient time to analyze proposals and to participate meaningfully at special meetings and, as a result, have determined to vote against such proposals.

- The funds will vote **for** proposals to amend a company's charter or bylaws, except that the funds will consider these proposals on a **case-by-case basis** if the funds' proxy voting service has recommended a vote against the proposal.

Commentary: If the substance of any proposed amendment is covered by a specific guideline included herein, then that guideline will govern.

France

- The funds will vote **for** proposals to approve a company's related party transactions, except that the funds will consider these proposals on a **case-by-case basis** if the funds' proxy voting service has recommended a vote against the proposal.
- If a company has not proposed an opt-out clause in its articles of association and the implementation of double-voting rights has not been approved by shareholders, the funds will vote **against** the ratification of board acts for the previous fiscal year, will **withhold votes** from the re-election of members of the board's governance committee (or in the absence of a governance committee, against the chair of the board or the next session board member up for re-election) and, if there is no opportunity to vote against ratification of board acts or to withhold votes from directors, will vote **against** the approval of the company's accounts and reports.

Commentary: In France, shareholders are generally requested to approve any agreement between the company and: (i) its directors, chair of the board, CEO and deputy CEOs; (ii) the members of the supervisory board and management board, for companies with a dual structure; and (iii) a shareholder who directly or indirectly owns at least 10% of the company's voting rights. This includes agreements under which compensation may be paid to executive officers after the end of their employment, such as severance payments, supplementary retirement plans and non-competition agreements. The funds will generally support these proposals unless the

funds' proxy voting service recommends a vote against, in which case the funds will consider the proposal on a case-by-case basis.

Under French law, shareholders of French companies with shares held in registered form under the same name for at least two years will automatically be granted double-voting rights, unless a company has amended its articles of association to opt out of the double-voting rights regime. Awarding double-voting rights in this manner is likely to disadvantage non-French institutional shareholders. Accordingly, the funds will take actions to signal disapproval of double-voting rights at companies that have not opted-out from the double-voting rights regime and that have not obtained shareholder approval of the double-voting rights regime.

Germany

- The funds will vote **in accordance with the recommendation of the company's board of directors** on shareholder counter motions added to a company's meeting agenda, unless the counter motion is directly addressed by one of the funds' other guidelines.

Commentary: In Germany, shareholders are able to add both proposals and counter motions to a meeting agenda. Counter motions, which must correspond to a proposal on the agenda, generally call for shareholders to oppose the existing proposal, although they may also propose separate voting decisions. Counter motions may be proposed by any shareholder and they are typically added throughout the period between the publication of the meeting agenda and the meeting date. This guideline reflects the funds' intention to focus on the original proposal, which is expected to be presented a reasonable period of time before the shareholder meeting so that the funds will have an appropriate opportunity to evaluate it.

- The funds will vote **for** proposals to approve profit-and-loss transfer agreements between a controlling company and its subsidiaries.

Commentary: These agreements are customary in Germany and are typically entered into for tax purposes. In light of this and the prevalence of these proposals, the funds have adopted a guideline to vote for this type of proposal.

Taiwan

- The funds will vote **for** proposals to amend a Taiwanese company's procedural rules.

Commentary: Since procedural rules, which address such matters as a company's policies with respect to capital loans, endorsements and guarantees, and acquisitions and disposal of assets, are generally adopted or amended to conform to changes in local regulations governing these transactions, the funds have adopted a guideline to vote for these transactions.

As adopted January 24, 2020

Proxy voting procedures of The Putnam Funds

The proxy voting procedures below explain the role of the funds' Trustees, proxy voting service and Director of Proxy Voting and Corporate Governance ("Proxy Voting Director"), as well as how the process works when a proxy question needs to be handled on a case-by-case basis, or when there may be a conflict of interest.

The role of the funds' Trustees

The Trustees of The Putnam Funds exercise control of voting proxies through their Board Policy and Nominating Committee, which is composed entirely of independent Trustees. The Board Policy and Nominating Committee oversees the proxy voting process and participates, as needed, in the resolution of issues that need to be handled on a case-by-case basis. The Committee annually reviews and recommends, for Trustee approval, guidelines governing the funds' proxy votes, including how the funds will vote on specific proposals and which matters are to be considered on a case-by-case basis. The Trustees are assisted in this process by the Proxy Voting Director, independent legal counsel, and an independent proxy voting service. The Trustees also receive assistance from Putnam Investment Management, LLC ("Putnam Management"), the funds' investment adviser, on matters involving investment judgments. In all cases, the ultimate decision on voting proxies rests with the Trustees, acting as fiduciaries on behalf of the shareholders of the funds.

The role of the proxy voting service

The funds have engaged an independent proxy voting service to assist in the voting of proxies. The proxy voting service is responsible for coordinating with the funds' custodian(s) to ensure that all proxy materials received by the custodians relating to the funds' portfolio securities are processed in a timely fashion. To the extent applicable, the proxy voting service votes all proxies in accordance with the proxy voting guidelines established by the Trustees. The proxy voting service will refer proxy questions to the Proxy Voting Director for instructions under circumstances where: (1) the application of the proxy voting guidelines is unclear; (2) a particular proxy question is not covered by the guidelines; or (3) the guidelines call for specific instructions on a case-by-case basis. The proxy voting service is also requested to call to the attention of the Proxy Voting Director specific proxy questions that, while governed by a guideline, appear to involve unusual or controversial issues. The funds also utilize research services relating to proxy questions provided by the proxy voting service and by other firms.

The role of the Proxy Voting Director

The Proxy Voting Director, a member of the Office of the Trustees (the Trustees' independent administrative staff), assists in the coordination and voting of the funds' proxies. The Proxy Voting Director deals directly with the proxy voting service and, in the case of proxy questions referred by the proxy voting service, solicits voting recommendations and instructions from the Chair of the Board Policy and Nominating Committee, and Putnam Management's investment professionals, as appropriate. The Proxy Voting Director is responsible for ensuring that these questions and referrals are responded to in a timely fashion and for transmitting appropriate voting instructions to the proxy voting service. In addition, the Proxy Voting Director is the

contact person for receiving recommendations from Putnam Management's investment professionals with respect to any proxy question in circumstances where the investment professional believes that the interests of fund shareholders warrant a vote contrary to the fund's proxy voting guidelines.

On occasion, representatives of a company in which the funds have an investment may wish to meet with the company's shareholders in advance of the company's shareholder meeting, typically to explain and to provide the company's perspective on the proposals up for consideration at the meeting. As a general matter, the Proxy Voting Director will participate in meetings with these company representatives.

The Proxy Voting Director is also responsible for ensuring that the funds file the required annual reports of their proxy voting records with the Securities and Exchange Commission. The Proxy Voting Director coordinates with the funds' proxy voting service to prepare and file on Form N-PX, by August 31 of each year, the funds' proxy voting record for the most recent twelve month period ended June 30. In addition, the Proxy Voting Director is responsible for coordinating with Putnam Management to arrange for the funds' proxy voting record for the most recent twelve month period ended June 30 to be available on the funds' website.

Voting procedures for referral items

As discussed above, the proxy voting service will refer proxy questions to the Proxy Voting Director under certain circumstances. Unless the referred proxy question involves investment considerations (*i.e.*, the proxy question might be seen as having a bearing on the economic interests of a shareholder in the company) and is referred to Putnam Management's investment professionals for a voting recommendation as described below, the Proxy Voting Director will assist in interpreting the guidelines and, if necessary, consult with the Chair of the Board Policy and Nominating Committee on how the funds' shares will be voted or confer with a senior member of the Office of the Trustees.

The Proxy Voting Director will refer proxy questions that involve investment considerations, through an electronic request form, to Putnam Management's investment professionals for a voting recommendation. These referrals will be made in cooperation with the person or persons designated by Putnam Management's Legal and Compliance Department to assist in processing referral items. In connection with each item referred to Putnam Management's investment professionals, the Legal and Compliance Department will conduct a conflicts of interest review, as described below under "Conflicts of interest," and provide electronically a conflicts of interest report (the "Conflicts Report") to the Proxy Voting Director describing the results of the review. After receiving a referral item from the Proxy Voting Director, Putnam Management's investment professionals will provide a recommendation electronically to the Proxy Voting Director and the person or persons designated by the Legal and Compliance Department to assist in processing referral items. The recommendation will set forth (1) how the proxies should be voted; and (2) any contacts the investment professionals have had with respect to the referral item with non-investment personnel of Putnam Management or with outside parties (except for routine communications from proxy solicitors). The Proxy Voting Director will review the recommendation of Putnam Management's investment professionals (and the related Conflicts Report) in determining how to vote the funds' proxies. The Proxy Voting Director will maintain

a record of all proxy questions that have been referred to Putnam Management's investment professionals, the voting recommendation, and the Conflicts Report. An exception to this referral process is that the Proxy Voting Director will not refer proxy questions in respect of portfolio securities that are held only in funds sub-advised by PanAgora Asset Management, Inc.

In some situations, the Proxy Voting Director may determine that a particular proxy question raises policy issues requiring consultation with the Chair of the Board Policy and Nominating Committee, who, in turn, may decide to bring the particular proxy question to the Committee or the full Board of Trustees for consideration.

Conflicts of interest

Occasions may arise where a person or organization involved in the proxy voting process may have a conflict of interest. A conflict of interest may exist, for example, if Putnam Management has a business relationship with (or is actively soliciting business from) either the company soliciting the proxy or a third party that has a material interest in the outcome of a proxy vote or that is actively lobbying for a particular outcome of a proxy vote. Any individual with knowledge of a personal conflict of interest (e.g., familial relationship with company management or a significant personal investment in the company) relating to a particular referral item shall disclose that conflict to the Proxy Voting Director and the Legal and Compliance Department and may be asked to remove himself or herself from the proxy voting process. The Legal and Compliance Department will review each item referred to Putnam Management's investment professionals to determine if a conflict of interest exists and will provide the Proxy Voting Director with a Conflicts Report for each referral item that: (1) describes any conflict of interest; (2) discusses the procedures used to address such conflict of interest; and (3) discloses any contacts from parties outside Putnam Management (other than routine communications from proxy solicitors) with respect to the referral item not otherwise reported in an investment professional's recommendation. The Conflicts Report will also include written confirmation that any recommendation from an investment professional provided under circumstances where a conflict of interest exists was made solely on the investment merits and without regard to any other consideration.

As adopted March 11, 2005 and revised most recently on January 24, 2020.